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Notes and Items.

BEING asked the name of the world's greatest composer, a smart university young man said: "Chloroform."

"THERE, I've forgotten my medicine."
"Well, you want to be careful; first thing you know you'll be getting well."

LEPROSY does not seem to destroy in man that tendency to evil "as the sparks to fly upward;" for the lepers in the Sandwich Islands settlement have taken to distilling and drunkenness.

A SYSTEMATIC trial of the Gurjun oil treatment, from which Father Damien and several members of his afflicted flock at Molokai are said to have derived benefit, is now being made at the Leper Hospital at Azra.

"DOCTOR, I hear you have left Brownstown."
"Yes."
"What made you do so? after your five years practice there."
"Well, all my clients were dead."

TWO soldiers come to the army doctor: Dr. to No. 1: "What's the matter?"
No. 1: "Diarrhœa."
Dr. to No. 2: "And you?"
No. 2: "Constipation, Doctor."
Doctor: "Well, clear out and don't bother me; you can arrange the matter between you."

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MALTINE in its different forms is the only Malt Preparation we now employ, being so palatable, digestible, and easily assimilated. Of its efficiency in appropriate cases there is no more doubt in our minds than there is of the curative power of Quinine, Cod Liver Oil, the Bromides and the Iodides. It deserves to tand in the front rank of constructives; and the constructives, by their preventive, corrective, and curative ower, are probably the most widely useful therapeutical agents that we possess. PROF. L. P. YANDELL.

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CHLORIDE of SODIUM added	½	"
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The Times and Register.

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Original Articles.

A COMPARATIVE STUDY OF COMMON FORMS OF CONVULSIONS.

(Read before the Chicago Medical Society, October 7, 1889.)

BY ARCHIBALD CHURCH, M.D.,

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THE term *convulsion* has been used and is still employed with such widely differing meaning that a definition of the significance it is to bear is a primary consideration. Ordinarily, it is supposed to occupy a median position between tremor on the one hand and spasm on the other; but it often presents both, or shades off into both, yet has features common to neither.

It is desired here by convulsion to designate a more or less extensive, arythmical, *violent*, incoördinate and involuntary activity of striated muscle not controllable by the will, and to predicate of such phenomena a symptomatic position and value.

Convulsions are *clonic* or *tonic*, or both. As ordinarily encountered and here considered, they are associated with epilepsy, chorea, hysteria, tetanus, rabies, strychnine poisoning, uræmia, and acute organic cerebral lesions, embracing hemorrhage, inflammation and trauma.

Under epilepsy it is probably proper to include infantile convulsions, for if not identical in nature, a close relationship exists, as is clearly expressed by the fact that, of epileptics, ten per cent. present convulsions during infancy; and of cases of epilepsy beginning during the first three years of life, two-thirds have so-called infantile convulsions. Widely diverse as are the convulsive phenomena resulting from acute organic lesions of the brain, they yet have a number of common characters which may perhaps justify their being grouped under one head.

Such a classification is necessarily somewhat arbitrary, but is of assistance in discussing the convulsive state. The difficulty inherent to such a subject is made no less by the fact that in the same disease the convulsive manifestations vary within wide limits in different patients, and even in the same patients at different times. By grouping the attending symptoms, however, and selecting fairly typical cases, a tolerably well marked outline can be constructed which will fit upon the observed phenomena in the various diseases and point the way to a diagnosis.

Epilepsy being the convulsive disease *par excellence*, a description of a well-marked convulsion in this malady may serve as a standard of comparison in the examination of analogous displays of hyperkinesis in other diseased states.

The patient, usually in apparently good health physically, but with a personal or family neurotic history, and possibly the record of previous convulsions, presents for a day or two previous to the attack some mental erethism. He is more than usually loquacious or cheerful or boisterous, but more frequently morose, irritable and quarrelsome. There may be vague sensations and a feeling of strangeness, approaching trouble or actual discomfort. At times the facial appearance is changed. It may be puffy or suffused and pale, and rarely a few hours before the fit a dusky hue has been noticed. Finally, with or without an *aura* or warning of any sort, the

convulsion commences suddenly in tonic form. The face is pale, consciousness and sensibility are instantly lost, and the patient falls heavily and lies rigid. The vigorous contraction of the chest muscles, attended by laryngeal spasm at the same time, occasions a peculiar cry—sharp and piercing or guttural and barking. This may be the first intimation of the fit to those about him. A distinct lateral tendency is the rule. The eyes, head and body turn to the right or left, and complete circles may be described before the fall. All the voluntary muscles are affected to some degree, but there is a greater activity unilaterally. At this stage the position assumed is the result of the greater mechanical power of the various groups of muscles implicated. The flexors predominate in the upper extremities, the extensors in the lower. The hands, often clenched, are as frequently in the "inter-osseal position:" that is, the fingers divergent and extended, except at the metacarpo-phalangeal joints. The hand may assume the cone shape of the accoucheur, or, having seized upon an object, may grasp it with wonderful energy. There is a slight tendency to flex the thumb into the palm.

Owing to the contraction of the respiratory muscles and the pressure upon the great vessels of the neck, there occurs asphyxia with cyanosis. The face promptly becomes red, then livid and intensely congested. The lips are a blue-black. The jaws are firmly set, and the tongue or cheek, if caught between the teeth, may be badly lacerated. One can now detect, with the hand upon the tonically contracted muscles, a quivering not noticeable to the eye. This increases, and the clonic stage is developed.

The pupils are dilated, and the open eyes, turned upward and toward the more affected side, present nystagmus or strabismus, or both. The sharp clonic contractions of the respiratory muscles now produce stertorous breathing, and the saliva is forced through the teeth and lips mixed with blood; if the tongue has been bitten, in a bloody froth. The limbs are arythmically contorted in a superlatively incöordinate manner, and all are affected by the clonic spasm; so that the patient is said to be "worked." The urine and fæces may be voided by the action of the abdominal muscles. Gradually the intervals between the clonic contractions lengthen, and the latter finally cease to occur, though the last is usually as vigorous as any, The temperature rises to 102° or 103°. Immediately or following a short period of semi-consciousness, the patient falls into a heavy and sometimes comatose sleep, from which he is aroused after a variable time with headache, muscular pains, and no knowledge of what has occurred during the convulsion, or he may not even appreciate that he has had a seizure. At this time maniacal outbursts are liable to occur. The convulsion lasts from one to five minutes, and is followed after the sleep by a return to full consciousness. Such a convulsion, if seen by a medical man, cannot be mistaken; but in epilepsy the attack may be infinitely modified, and present only one or two of the numerous features which make up the total of a typical seizure. Perhaps the most constant and characteristic indications are the unconsciousness, and following tendency to sleep.

Chorea presents a widely different picture. Only in its severest form are there true convulsions, the ordinary manifestations of hyperkinesis being properly described as spasmodic. In very rare instances the spasms occur with such rapidity that clonic and even tonic convulsions are developed, producing a state which might be confounded with an atypical condition of *status epilepticus* or tetanus, or the epileptoid manifestations of gross cerebral lesions.

The history of the case, the retention of consciousness, the control of the sphincters, the unimpaired cutaneous sensibility, the rapidly-repeated and long-continued spasmodic action, the intervals of complete relaxation, the absence of trismus and pharyngeal spasm are distinctive. Voluntary movements also intensify the spasm and incoördination. A history of acute rheumatism or its coexistence is common, and when present is attended by elevation of temperature with excess of urates and phosphates in the urine.

That multiform disease, which we denominate hysteria, often furnishes imposing and even terrifying convulsive phenomena. They have a proper physiognomy, so to say, though there is nothing in the range of nervous disease manifestations which may not be more or less well simulated in this protean neurosis.

The patient is usually a young woman of an emotional tendency and neurotic inheritance, who has presented from childhood those characteristics which lead a thoughtful observer to entertain fears for nervous stability under unusual strain. Leaving aside the endless other manifestations of the disease, it is desired only to consider its convulsive features when they attain to a degree which calls for their distinction from the hyperkinesis of different origin. As a rule, the convulsion is, so to speak, the climax of an emotional storm. The patient is wrought up to it, or gradually approaches the crisis after a mental strain due to fear, anger or sorrow, but in cases of long standing the convulsions may be brought on with considerable suddenness, and sometimes without the apparent connivance on the part of the one subject to them. In other cases again, there is an aura, something similar to that of epilepsy, which is usually described as a peculiar sensation commencing in the lower extremities or lower portion of the body, and which, gradually creeping upward, overwhelms the patient. A very usual premonition is the *sensation of globus*, which is attributed to a sort of perverse peristaltic spasm of the œsophagus and pharynx. She may fall, and fall heavily, but never mutilates herself, nor disfigures the face, and almost never has an attack when alone. Most frequently a recumbent posture is sought, or the patient quietly collapses and slides to the ground without instantaneous unconsciousness and insensibility, which, indeed, are rarely complete and often not present. There is no initial involuntary scream. If rigidity now occur, it is of a peculiar sort. The lower extremities are extended, adducted, and even crossed; the feet are almost in line with the legs from over-extension, and the toes are curled down in extreme

flexion. The arms are rigidly extended beside the trunk, or at right angles to the body in the so-called "crucial" position. The fingers are firmly clinched upon the inverted thumb, or the thumb is extended between the flexed index and middle fingers. The "interosseal position" is never seen. The head is extended, and a well-marked tendency to *opisthotonos* is commonly present. The eyes are closed, the pupils normal and reacting to light. There may be conjugate deviation or convergent strabismus. Divergent squint is never encountered. Nystagmus not seen. Asphyxia is never prominent, and the breathing is without stertor and the frothing mouth. After a variable time, usually after a number of minutes, clonic movements appear, but they are quite different from those of epilepsy, being symmetrical, rythmical and coördinated. Attempts to control them intensify the muscular action. Often they are merely coarse tremors or twitchings. At this stage theatrical poses, gestures, and emotional expressions with hallucinations and delirium are frequent, and a dramatic element at some period of the outburst is the rule. There may be retention of urine, but loss of sphincteric control of the bladder and rectum is never present. The clonic movements may last from a few moments to several hours, and gradually fade out, unlike epilepsy, in which the last contraction is as strong as the first. Stupor is often assumed. Coma is next to never encountered. The lethargic sleep, so characteristic of epilepsy, does not occur. The pulse and temperature are normal, or only manifest such fluctuations as would naturally attend such mental excitement and muscular effort. The recovery from the convulsion is sometimes prompt, and is often marked by the voiding of a large quantity of limpid urine of low specific gravity. In rare cases, however, anuria of several days duration without uræmic symptoms has been recorded, and in such cases the integument is usually over-active, and may be covered with a fine deposit of urates, the elimination of which is also assisted by the lungs. If the patient does not at once recover her ordinary mental state, a period elapses during which those accustomed to her notice that there is still something wrong, and this state gradually passes away, or is terminated by another convulsion. During the intervals of repose asymmetrical and *bizarre* areas of anæsthesia can be ordinarily determined, and also sensitive zones symmetrically located usually in the ovarian regions, under the mammæ and on either side of the vertebral column. Firm pressure on these so-called hysterogenic zones may determine the premonitory symptoms of a convulsion, or even induce a convulsive attack, and during a convulsion may cause its speedy cessation. Analogous to the cutaneous areas of anæsthesia the visual field is irregularly and asymmetrically contracted, a pathognomonic sign, according to Charcot. There are often local palsies or contractions which may go on to contracture and finally lead to degeneration in the cord. Memory is not impaired, though there may be no recollection of convulsions. Mental application, will power, self-reliance, in a word, psychic equilibrium, is below *par*, a condition at times intensified into positive insanity.

It is to be borne in mind that the male is also subject to hysteria, and may present all its symptoms, even to the tenderness in the position corresponding to the ovarian region in the female, and that hysteria does not preclude other and even organic neuroses.

In tetanus the continuous rigidity is usually marked by convulsive exacerbations, a condition possibly confounded with strychnine poisoning, rabies or hysteria. Three-quarters of all cases of tetanus occur between ten and forty years of age, only one-sixth are females, and traumatism is of record in the large majority of instances. After an incubative period of from ten to fourteen days or less there is usually a period of restlessness and insomnia preceding the development of the muscular symptoms. These invariably first appear in the musculature of mastication and deglutition, and are accompanied or immediately followed by stiffness in the muscles at the back of the neck, but the trismus is the important and characteristic sign. The extension is centrifugally to the face in one direction, to the back, chest and limbs in the other. The upper extremities are rarely affected below the elbows. The distribution of the spasm is symmetrical, with a tendency to opisthotonos from the very first. There is no remission of the contraction, but at intervals, after the extension of the rigidity is considerable, there occur intervals of vigorous convulsive movements which consist of intensified tonic action with the addition of clonic spasm. These exacerbations may be incited by any noise, by an attempt to move, to swallow or to speak, by a slight jarring or even a draught of air. The appearance of the face is characteristic. The lower jaw is firmly fixed by the elevators and depressors usually with the teeth in apposition, but sometimes the dental arcades are not in contact; the corners of the mouth are drawn outward and downward, stretching the thinned lips away from the teeth; the forehead is wrinkled by the corrugators and occipito-frontalis; the staring eyes are partially closed by the orbicular muscles. Various emotions are thus simultaneously indicated; the upper face shows astonishment, the eyes mirth, the mouth anger, and the whole has been denominated the *risus sardonicus*.

There is no strabismus or nystagmus, but the pupils are dilated. The breathing is hindered, and asphyxia follows with facial congestion and cyanosis. Consciousness may be lost momentarily. Guttural sounds are occasionally produced by the spasmodic action of the respiratory muscles, and implication of the diaphragm gives rise to a characteristic ventral pain. Sometimes the tongue is caught between the teeth and lacerated. These exacerbations last from five to twenty seconds, are extremely painful and much dreaded by the patient; who is conscious through it all, and until the last, except at brief moments, when the asphyxia is intense. If sleep is obtained there is only partial relaxation. The continued spasm of the sphincters determines constipation, and retention of urine which is of high color and specific gravity, though presenting no increase of nitrogenous material even during hyperpyrexia. The temperature is fickle and depends largely on the nervous element. Often there is no elevation of bodily

heat, but again it runs up to 102°–103° and even 107°, associated, as was pointed out by Verneuil, with the intensity and frequency of the convulsive attacks. The pulse is small and thready, pointing to vaso-motor spasm. The deep reflexes are at first subnormal or unchanged, but later are exaggerated; as is the cutaneous sensibility. Death results from asphyxia, exhaustion or hyperpyrexia. In the small percentage of cases going on to recovery (15 per cent.) the convulsions grow more rare and less violent, the rigidity less intense, muscular weakness and even paralysis often persist, but relapses are unknown.

In rabies, as in tetanus, the greater proportion ($\frac{5}{6}$) of patients are of the male sex, owing undoubtedly to their greater exposure to the bites of rabid animals. The convulsive phenomena in this disease are developed only in the later stages. There is first of all a history of the bite by a representative of the feline or canine family supposedly or actually rabid. The incubation period lasts from one to nine months; during which the health may have been unimpaired. Restlessness, malaise, insomnia, some pain in the region of the bite, are prodromal symptoms, followed in a few days by pharyngeal and laryngeal spasm, producing precordial pain, difficulty in swallowing, and a sighing respiration marked by catching of the breath as if the patient had been suddenly subjected to a drenching with cold water.

The breathing is labored, of the upper chest variety, and carried on by the superior extraordinary muscles of respiration. There is shivering and sometimes an intensification of this which may properly be designated as a general clonic convulsion. The pharyngeal spasm increases, the horror of water becomes intense, and any attempt to drink, or the sight of water, or sometimes its mere suggestion, determines convulsive contractions of the muscles of deglutition and respiration in which those of the face may participate. Meanwhile thirst is constant and the patient exerts himself to overcome the convulsive inability to satisfy it, but without avail. Cutaneous and special sensibility become enormously exaggerated. The slightest touch or breath of air may renew the convulsion. Sounds inaudible to the attendants are plainly distinguished by the patient. Magendie reports the case of a child born deaf and dumb that heard during the later phases of hydrophobia. The pulse is irregular and thready. There is constant insomnia. Hallucinations of hearing and sight are common, and delirium at times appears, in which the patient attacks those about him, sometimes tries to bite them, at others to escape and roam at large, or secrete himself. The inability to swallow the saliva, and the addition thereto of bronchial mucus, determines a constant flow of thick glairy fluid from the mouth, which distresses the patient and causes constant efforts at expectoration. Vomiting of dark brown material is common. The convulsions become more frequent and more extensive. They are now marked by tetanoid rigidity with opisthotonos, but present complete, or nearly complete, remissions, and trismus is absent or only appears at a late stage. Priapism and ejaculations are frequently recorded. The convulsive movements are manifestly coördinate and often hysteroid in character, lasting but a few moments at each access. Aside from photophobia the eyes are not characteristically affected. Sometimes the tongue presents on the lateral borders a number of vesicles to which the ancients attributed much importance and which gave the name "lyssa" to the disease. The voice is changed, being hoarse and accompanied by a rasping cough which has fancifully been likened to the barking of a dog. The urine is frequently albuminous and sometimes presents sugar. The temperature ascends *pari passu* with the increase of the convulsions and may reach 104-5° or 106°. The asphyxia becomes more marked at each access, and finally, as a rule, is the cause of death, but the fatal termination may depend on heart failure or a generalized paralytic state similar to that which terminates most generally the disease in the lower animals. The result is invariably in death in from one to four days. The distinctive signs are pharyngeal spasm, sighing or "catching" respiration, inability to swallow, dread of water, clonic convulsions, preceding the tonic, intense cutaneous sensibility, and the thick salivary discharge from the mouth.

Serious poisoning from strychnine, fortunately, is very rarely encountered, but its medico-legal importance requires familiarity with the convulsive indications of its action which have at times been confounded with similar conditions of other origin. The symptoms are much modified by a variety of circumstances, such as the presence or absence of food in the stomach, or the existence of any disease which retards assimilation. The quantity of the drug determines proportionate results. The method of its exhibition, whether hypodermically or otherwise, also influences the rapidity of its operation. Ordinarily, in a few minutes after the ingestion of some alimentary or other substance which may have had a bitter taste, symptoms of excitation of the nervous system are developed. If the dose is comparatively small there is mental excitement, overactivity of the special senses, restlessness, itching of the skin, and a subjective greenish hue before the eyes. Then occurs muscular twitching, most marked in the face and extremities, followed by tetanic general convulsions. If the dose has been large the convulsions are of immediate occurrence. They resemble in action, distribution, and intensity the exacerbations of tetanus which have been above described, but last only from one-half minute to three minutes, and are followed by complete relaxation. They rarely present trismus, and that in only the later stages.

As a rule, there are but four or five convulsions in fatal cases, occurring at intervals of from five to fifteen minutes. They may be incited by an unexpected noise, a jar, or a draught of air; but when the patient is forewarned of such excitants, no convulsive effect is produced—a distinguishing feature from the hyper-excitability of tetanus and rabies, in which volition seems to be powerless to control the discharges of nerve force. In non-lethal cases, the convulsions grow less severe and the intervals longer.

DIFFERENTIAL TABLE.

Convulsions in.....	EPILEPSY.	SEVEREST FORM OF CHOREA.	HYSTERIA.	TETANUS.	RABIES.	STRYCHNINE.	URÆMIA.	ACUTE CEREBRAL ORGANIC LESIONS.
Age.....	3-4 of all cases begin under 20 years.	9-10 of all cases occur from 5 to 20 years	9-10 of all cases are under 30 years.	3-4 of all cases occur from 10 to 40 years.	Any age.	Any age.	Usually adults.	Usually adults.
Sex.....	5 males to 6 females.	1 male to 3 females.	1 male to 20 females.	6 males to 1 female.	5 males to 1 female.	Either sex.	Either sex.	Either sex.
Present History....	Of previous attacks and heredity.	Of rheumatism chorea and heredity.	Of previous attacks and heredity.	Of traumatism in 3-4 of all cases.	Of bite of rabid animal.	Of ingestion of some substance.	Of disease giving rise to blood infection.	Of traum. apoplex., fever, etc.
Prodromata.....	Changed appearance, mental erethism an aura.	Changed disposition, forgetfulness, choreic movements.	Emotional excitement.	Mental erethism.	Excitement, insomnia, changed disposition, pain in wound.	Anxiety, exaggerated sensibility, special and general Green hue before the eyes.	Irritability, neuralgias blindness.	Hebetude, coma.
Onset.....	Suddenly with peculiar cry. Tonic.	Gradual intensification of choreic movements.	Rarely suddenly, usually after other hysterical manifestations.	Trismus always initial, and tonic spasm prominent.	Pharyngeal spasm, catching respiration, shivering and clonic manifestations.	Twitching of face and extremities, clonic followed by tonic convulsions.	Usually sudden in tonic form.	Often sudden and clonic.
Muscular Distribution in Order of Implication.....	All voluntary and some involuntary muscles at once.	Face and extremities becoming generalized.	All voluntary muscles in no particular order.	Muscles of mastication deglutition, back of neck, respiration, trunk, arms and lower extremities.	Muscles of pharynx, larynx, respiration, trunk, limbs, face.	Muscles of face and extremities becoming generalized.	General as in epilepsy.	Localized, one extremity or one side of body, etc.
Coördination.....	Totally lost.	Lost.	Not Lost.	Lost.	Partial, becoming lost.	Lost.	Lost.	Lost.
Symmetry of Movements.....	A lateral tendency well marked.	Lost completely.	Well marked.	Both sides act together.	Both sides act together.	May be symmetrical, but usually not.	As in epilepsy.	No symmetry.
Sphincters.....	Control lost.	Control retained.	Control completely retained.	Spasm causing retention.	Control rarely impaired.	Control retained, tendency to spasmodic retention.	Control often lost.	Control may be lost.
Eyes.....	Open, pupils dilated, not reacting, strabismus, nystagmus, winking, conjug., deviation.	Blepharospasm, nystagmus.	Closed pupils, normal and reacting to light; may be closed. Strabismus.	Partially closed by orbicular spasm. Pupils dilated.	Usually unaffected.	Strabismus—orbicular spasms.	As in epilepsy.	No symmetry.
Mouth.....	Frothing.	Sometimes frothing.	Never frothing.	Teeth uncovered, lips thin and retracted.	Flow of thick, glairy saliva, etc.	Not frothing.	As in epilepsy with flapping cheeks and frothing mouth during coma.	As in uræmia.
Tongue.....	Often bitten.	Rarely bitten.	Never bitten.	May be bitten.	Very rarely bitten.	Not often bitten.	Rarely bitten.	Rarely bitten, may deviate, etc
Pulse.....	Tense and rapid.	Rapid and variable.	May be normal.	Indicates vaso-motor spasm.	Weak and thready.	Irritable, variable, rapid and unequal.	Indicates vaso-motor spasm.	Often full and tense, varies according to seat of lesion.
Temperature.....	Elevated 103°.	Elevated during convulsions and rheumatic conditions.	Normal.	Often reaches 106°.	106° in terminal stages.	Elevated in tetanic stages.	Often subnormal.	Variable, may be elevated or depressed.
Urine.....	Normal.	Excess of urates and phosphates in rheumatic conditions.	Large quantity and limpid.	Retained; high color, and sp. gr. No excess of nitrogenous material.	May present albumen or sugar.	Normal.	Albumen and excess of nitrogenous material. May be suppressed. Usually small in quantity.	May be retained or overflow. Often ammoniacal.
Asphyxia.....	Prominent in tonic stage.	Absent.	Absent.	Prominent feature of the exacerbation.	Occurs in tetanoid stage.	Occurs in terminal tetanoid attacks.	Not prominent.	Often present in moderate degree.
Coma.....	Rarely follows convulsions	Absent.	Absent.	Absent.	Absent.	Absent.	Prominent and continuous.	Often prominent and continuous.
Consciousness.....	Promptly lost.	Not lost.	Only partially lost.	Lost during severe asphyxia.	Lost during severe asphyxia.	Lost during severe asphyxia.	Lost during convulsions and coma	Lost during coma and severe convulsions.
Cutaneous and Special Sensation.....	Lost during convulsion.	Not lost.	Not entirely lost; often presents areas of anæsthesia, sensitive zones, and limitation of visual field.	Exaggerated.	Much exaggerated.	Very much exaggerated.	Subnormal. Lost during convulsions and coma.	Often presents areas of anæsthesia and defects of special senses.
Duration of Convulsion.....	1 to 5 minutes.	Continuous for hours.	A few minutes to several hours.	5 to 30 seconds.	5 to 30 seconds.	5 to 30 seconds.	1 to 5 minutes.	1 to 5 minutes.
Paralysis.....	None.	Very rare—often weakness.	Frequent.	Sometimes a sequel.	None.	None.	None.	Frequent and limited.
Pain.....	Muscular pains and headaches follow convulsions.	Rheumatic pains.	Neuralgic pains.	Ventral pain and severe pain in contracted muscles.	Precordial pain and painful cramps.	General shooting pains worst during convulsions.	Various.	Headaches and localized pains.
Usual Termination of Disease.....	By intercurrent affection—rarely in status.	In this form often fatal from exhaustion.	Never fatal.	Usually fatal from exhaustion or asphyxia.	Always fatal from Asphyxia, exhaustion or generalized paralysis.	Depends on dose. Fatal cases end in asphyxia or exhaustion.	Often fatal from exhaustion or cardiac failure.	Often fatal from exhaustion, heart failure pulmonary œdema.

In fatal cases, death occurs from asphyxia during the tetanic rigidity, or from exhaustion. The entire course of the poisoning is comprised within the limits of four or five hours. Its abrupt onset, the rapidity of its course, the lack of initial trismus or pharyngeal spasm, the mental clearness, the intervals of complete relaxation, make up in this convulsive state a picture which can scarcely be mistaken.

Uræmia, dependent upon Bright's disease, the puerperal state, scarlatina, and other of the febrile infectious maladies, is often marked by convulsions which strikingly resemble those of epilepsy and the epileptic status. When the disease which gives rise to the uræmic condition is recognized, the character of the attack is, of course, manifest. As a rule, the onset is comparatively sudden and unexpected. It may, however, be preceded by twitchings, irritability, loss of sight, neuralgia of the fifth nerve, tingling, formication, and mental distress. In the parturient woman, there is often an interval of quiet and drowsiness before the attack. Various degrees of severity are encountered, from a slight clonic movement in a few groups of muscles or in one extremity, to the most pronounced and frightful convulsive manifestations imaginable. The type presents a sudden tonic convulsion, followed by clonic movements, with all the characters of a true epileptic seizure excepting the initial cry. A distinctive point is that coma follows and persists until the next convulsion, which occurs after a variable interval—sometimes after several hours. The persistence of coma is also true of the epileptic status, but the convulsions in epilepsy occur with much greater rapidity.

The circle of phenomena is described with a shorter radius, so to speak, and fifty or an hundred convulsions in a day are not uncommon, while in uræmia four or five would be nearer the average for that length of time. Moreover, status is always a late stage of epilepsy, the history of which, when obtainable, should prevent error. In uræmia, also, the temperature is ordinarily distinctly subnormal, unless active febrile movement is determined by the attending disease. Œdema, pallor, waxiness, or the history of fever directs attention to the urine. The presence of albumen, or a condition of anuria, constitutes a strong indication of the uræmic etiology of the convulsions.

In acute organic cerebral lesions, the history previous to the convulsions is of the utmost importance in their diagnosis. The temperature and characteristic headaches of meningitis, the possibility of the extension of meningitic trouble, from depots of purulent infection, as in the ear, the sudden onset of hemorrhage, and the evidence or history of traumatism, all have weighty significance. The convulsions have the common feature of being caused by a more or less localized, persistent, and irritating condition, which gives rise to repeated discharges of nerve force. They present, ordinarily, a superabundance of clonic movements, and the tonic element may even be entirely lacking. As a rule, the convulsions are not generalized, but are often so distinctly limited to a limb or a group of muscles that the brain lesion can be definitely localized. Areas of anæsthesia and hyperæsthesia and limited palsies point in the same direction, especially when anatomically associated. There is a well-marked tendency to continuous somnolence and coma. The temperature is fickle, depending on the cerebral implication, which also gives rise to a variable pulse. There may be incontinence of urine and fæces, or retention of urine with overflow. A tendency to bed sore is common. Strabismus, inequality of the pupils, optic neuritis, and paralysis of cranial nerves are not infrequent. Vomiting, of an inveterate expulsive sort, of apparent cerebral origin, is common, The convulsions may present all degrees of severity, but the mode of onset in a particular region, or other focal symptoms, usually make the character of the fit sufficiently manifest.

Appended is a tabular arrangement in parallel columns of these various forms of convulsions, with their symptoms and characters briefly indicated under twenty-three heads. (See page 605.)

ANTIPYRETICS, ANALGESICS AND HYPNOTICS.

(Read to the Missisippi Valley Medical Association at the Fifteenth Annual Session, September 10, 1889.)

By I. N. LOVE, M.D.,

President Section on Diseases of Children, A. M. A., Professor Diseases of Children, College Physicians and Surgeons, St. Louis.

IN this short paper I shall not attempt to treat of my subject, or rather trio of subjects, exhaustively or analytically, but only in a general way.

It goes without saying that antipyretics are remedies which reduce the body temperature when it is above the normal point.

We have had for many years a long list of remedies which properly come under this head, all accomplishing the same end more or less actively, but in different ways.

Some act by lessening the tissue changes, such as quinine; some by reducing the circulation, as digitalis, aconite, leeching, cupping or bleeding; others, like alcohol, by dilating the vessels of the skin and producing increased radiation; others, again, by stimulation of the sweat glands, and the evaporation following, such as Dover's powder and antipyrin; last of all, those which abstract heat from the body, cold baths, cold drinks, wet packs, etc.

Quinine has for a long time taken high rank as an antipyretic, but the profession has now arrived at the point, I believe, where other means are to be preferred, save in high temperature due to inflammation and to septic causes.

I think it should never be given to reduce the temperature in typhoid fevers; the demoralizing effect upon the stomach and nervous system is greatly to be feared. In these conditions, the cooling bath, coupled with antipyrin, acetanilid, and the new drug belonging to the same class, exalgine, to which I shall refer more fully later, are, I think, much more desirable. They have the advantage of not only reducing the temperature, but at the same time calming the nerve centers, and the last three of rendering the alimentary canal antiseptic.

En passant, I would like to emphasize the point that whatever the means used, the reduction should

not be made too suddenly and in excess. A gradual reduction is safer and more readily maintained.

Of all analgesics or remedies which relieve pain, opium and its derivatives stand first on the list, but there are many conditions where so powerful a remedy, or one so disposed to check the activity of the secretory glands, is contraindicated. Such cases are accommodated admirably by the modern coal tar products previously referred to, viz.: antipyrin and acetanilid.

I am already on record as favoring the latter drug, on account of its being more active, safe, reliable and reasonable in price; and, besides, it is not as potent a medicine as is antipyrin. This preference is based upon nearly two years' study and comparison of recorded bedside observation.

Sleep producing agents in the fullest acceptation of the term would naturally include all or many of the drugs which reduce temperature or allay pain.

The bromides, of course, are the most popular and purest hypnotics we possess, but chloral hydrate is one which deservedly ranks high.

Urethan, a new, or comparatively recent hypnotic, I have found of considerable value, and it possesses a great advantage over the two previously mentioned in that being very soluble in water, and non irritant to the tissues, it can readily be given hypodermically.

When given in sufficient quantities, ten to twenty grains, if a reliable product be used, it can be depended upon, unless the element of pain enter into the case as a cause of the restlessness, in which case it will fail.

Prof. Coze, of Nancy, has demonstrated urethan to be an absolute antagonist to strychnine. Potter's Hand-Book suggests that this fact would indicate that urethan would be useful in any form of convulsions, and especially in tetanus.

Exalgine, which has recently been added to the class represented by antipyrin and acetanilid, through the labors of Brigonnet, of the Cochin Hospital, has now been before the profession for some months.

A favorable pronouncement regarding this drug by Dujardin-Beaumetz prompted me to secure a goodly supply, and use when indicated. Two months' systematic use of the drug, while not absolutely convincing to me, has so favorably disposed me to it as to justify a continued and more enlarged application of it.[1]

Messrs. McKesson & Robbins furnish a two and a half grain gelatine coated pill of exalgine, which is a convenient means of administration. I have generally given one or two of these pills, according to age or conditions.

It has been claimed that this drug does not produce cyanosis, as do antipyrin and acetanilid. In a few cases I have observed slight cyanosis. However, I do not believe that this symptom, even when produced, is important.

I have administered exalgine in typhoid fever to good advantage. It reduced the temperature gradually and without depression, and aided in the securement of rest.

Owing to the impaired digestion in these cases, I have almost uniformly given the following formula:

℞.—Exalgine (McK. & R.)	℈ ij
Sp. vini Gallici	ʒ j
Elix. lactopeptine	ʒ iij

M. Dessertspoonful every two to four hours, as indicated.

An elegant and agreeable form to give the drug is the Exalginique Cordial, prepared by McKesson & Robbins. Each tablespoonful contains two and a half grains of exalgine, but the cordial will take up as much more exalgine very readily, if one desires to increase the strength. For delicate and æsthetic patients this is an admirable means of administration.

I agree with many observers that the analgesic property of exalgine is the predominating one.

I have observed no marked depression from the drug. The skin is rendered more active, and I think the secretions of the alimentary canal are favorably affected. The urine is somewhat diminished, and in a case of diabetes the amount of sugar was decreased. Rheumatism and neuralgia were favorably influenced.

A case of facial neuralgia in a physician was very satisfactorily treated by the use of exalgine. The paroxysms were relieved when present, and were prevented by doses of exalgine in anticipation.

If the medical profession had never accomplished more for human kind than that which it has done in the direction of relieving pain and securing sleep, no one could say that its mission had been in vain.

Pain, while being of great aid to us in diagnosis, is, if left unrelieved, a cause of exhaustion of nervous force, a destroyer of sleep, appetite and digestion. If long continued, it leads to changes shortening existence. It may in itself be so severe as to abruptly terminate life.

I believe it is the duty of the physician to save his patient any possible twinge of pain, within proper limits, of course; but in doing so he should guard carefully against the possibility of self-drugging upon the part of the patient. With this end in view, I deem it to be the physician's duty for him to dispense directly to patients all analgesics and sedatives. By so doing he limits absolutely the amount taken, at least it cannot be long continued against his orders. Another advantage is that, when desirable, and that will be in nearly all cases, he can keep from his patient a knowledge of the drug taken.

I think we are safe in concluding that all of the derivatives of the aromatic series, being antiseptic, antipyretic, and analgesic, are of great value to us in our battles with disease.

Acetanilid so far stands at the head of the list in my records, for the reason that I have had a longer and more extended experience with it.

The brief experience I have had with exalgine has been so satisfactory as to justify a more extended use.

We have received several queries about a note in our issue of August 10, concerning the use of biniodide of ammonium for removing powder stains. It seems that our druggists are not aware that such a salt exists. The note was from the *Revue de Thérapeutique Medico-Chirurgicale* of June 15, and is a correct translation.

THE KEMMLER CASE.

By T. D. CROTHERS, M.D.,
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WILLIAM KEMMLER was tried and convicted of murder at Buffalo, New York, May 10, 1889. He was sentenced to be executed by electricity under the new law. An appeal was taken on the ground that the law abolishing hanging and substituting electricity was wrong and unconstitutional, etc. A stay of sentence was granted, and a referee appointed to take evidence concerning the methods of carrying out the death sentence by electricity. A great amount of most valuable testimony has been taken ; some of it confusing and contradictory, from the leading electrical experts of the country. The question to be determined was the certainty and painlessness of death from a current of electricity, and certain legal questions as to the meaning of the law from its wording.

These questions have made the case a celebrated one, and will form the basis of a new literature, involving new points of law and science. Unfortunately for the credit of the common legal practice, this test case is that of an alcoholic and idiotic dement, the trial and condemnation of which brings out in lurid colors the injustice of the law, and the forcible application of mediæval theories of mind and human conduct.

William Kemmler, about twenty four years of age, a huckster, came from Philadelphia, Pa., where he was born, to Buffalo, in 1888, deserting his own wife, and bringing with him another man's wife as his paramour. They frequently quarreled, and the woman had threatened to kill him if he did not stop drinking. He had drank to intoxication every night for a long time before the commission of the crime. One morning he got up, went to the barn and gave some order about the care of his horses, then went to the house, and after a quarrel, struck this woman with a hatchet, inflicting twenty-six wounds, from which she died in a few hours. He told a lady who came to the door that he had killed his wife and would take the consequences. He went with another man for a doctor, and drank on the way, and finally gave himself up in a saloon soon after. He appeared dazed and silent after the commission of the crime for some time. He was given two dollars' worth of spirits at the station, and made several contradictory statements. Was examined by physicians and pronounced sane, only suffering from excessive use of spirits. The murder was committed the 29th of March. He was indicted and put on trial May 6 for murder. The testimony was a most startling history of excessive use of spirits by both the prisoner and his friends. It appeared that he had drank from twenty to thirty times a day, and often on a wager to show his power of out-drinking other men. He had been successful as a trader, but generally drank every night, and sometimes was very stupid. His father drank to excess at times all his life, and his mother died of some form of insanity in his infancy. He was brought up on the street, and began to drink beer at ten years of age. Had syphilis early in life and frequent attacks of it up to the time of the murder. He was of small stature, low browed, small, irregular brain, eyes sunken and unsteady, with a stealthy, suspicious look.

He has a hesitating, idiotic way of talking in a whining undertone, and is clearly dull of comprehension. He has always lived in the lowest surroundings, and has a defective brain development. His two brothers clearly resemble him in defective, irregular shaped heads and body. The prisoner had delirium tremens, or alcoholic delirium, several times. His father also suffered from this at different times in his life. Such were some of the facts which appeared on the trial.

The prisoner plead guilty to murder in the second degree, and the defense was that a man in this condition could not be responsible, and hence should not be punished to the full extent of the law. As an expert I testified that the prisoner was an alcoholic dement, and irresponsible maniac, basing my conclusions on the following facts :

1. He inherited an alcoholic diathesis and predisposition to use spirits from the slightest provocation. His inebriate father and insane mother entailed upon him brain defects from which he could not escape.

2. His early life of neglect, and early use of beer, poor, irregular food, no training, bad hygienic surroundings, all favored the growth of alcoholic excesses.

3. The frequent attacks from syphilis, and the excessive use of alcohol—which, during the last two years, had increased greatly—were all conditions which would break up the normal sanity of any one, particularly if he inherited mental defects from his parents.

4. The cool, insane-like character of the murder—killing his paramour with a hatchet, striking twenty-six blows in different parts of the body and head, when a saner mind would have struck but one blow —then giving himself up, with no effort to escape or deny the crime.

5. He had been intoxicated the night before the crime, and had for a long time been jealous of this woman. The morning of the crime he appeared dazed, like one who had not recovered from the effects of the alcoholic excess the night before; talked about the crime ; then later denied all memory of it. He had been drinking continuously for the year and more that he was in Buffalo, and also a much longer time before he came to Buffalo to live.

6. His conduct in the jail and during the trial showed no clear comprehension of his crime or its consequences. His idiotic appearance, together with the history, confirmed all the above conclusions.

Many other facts fully sustained this theory, and there seemed not a link wanting in the chain of causes and conditions pointing to alcoholic dementia.

The State assumed that, as he had conducted his business of a street peddler of vegetables with fair success, and showed some good reason in buying, and was not considered by his associates as anything more than a hard drinker, who sometimes did very unusual things when intoxicated, he must be sane and responsible for the crime. The heredity was ignored, and the crime was only considered as brutal

and vicious, and not lacking in any way the ordinary comprehension of a sane man. Two physicians thought that there was no evidence of any form and degree of insanity, and no appearance of idiocy or dementia in his manner. They swore that the use of alcohol to excess did not necessarily impair the brain or destroy the consciousness of right and wrong. The demented appearance of the prisoner was thought to be simulation of insanity. The judge, as usual on such occasions, charged the jury, leaving a most confused notion of law, fact and practice, and asking them to determine the value of the evidence and decide the most difficult questions of responsibility and mental health. The verdict was guilty of murder in the first degree. The facts of the prisoner's life, conduct and present state were ignored as of no value. The press echoed the sentiment of the court and demanded that Kemmler should hang. The defence of limited responsibility and lessened punishment was called subversion of justice. Some of the facts of unusual interest in this case are:

1. The failure of the court or medical witnesses to recognize the incapacity of the prisoner, and brain unsoundness and incapacity to realize the nature of his acts or their consequences.

2. To assume a state of sanity from the absence of hallucinations, delusions or mania, and judge the case from some narrow, imperfect study of the facts of the crime was an inexcusable blunder.

3. The assumption, that a defective-brain man could use alcohol to excess from early life, have syphilis and live badly, act strangely, and yet be fully responsible, is to ignore every advance of scientific study.

The zeal and haste of the State to convict such a case of murder in the first degree, is a sad reflection on common justice and humanity.

Such a case should have been sent to prison for life, for the reason that no other place is open to receive him. Law and technical psychology would differ about his mental condition, and shut him out from the insane asylum. This case has become celebrated as to how the death penalty shall be inflicted. Whatever the result may be, the trial and verdict of the jury were a disgrace to the intelligence and common sense of our present civilization.

This, like many other cases, shows the need of a larger, more accurate, scientific study before we can approach to any degree of justice in the treatment of criminal inebriates.

The following statements of conclusions which experience and scientific study are daily confirming, may be of interest:

1. The legal treatment of insanity has changed in obedience to a more accurate knowledge of the brain and its diseases.

2. The legal treatment of inebriety is unchanged to-day. Although it occupies two-thirds of the time of courts, all teachings of science and a larger knowledge of the inebriate and his malady are ignored.

3. The ruinous error of punishment of inebriety, and petty crimes associated with it, by fines and imprisonment, which notoriously increase and perpetuate the inebriate and criminal, is a fact demonstrable in every community.

4. Thus public opinion, through mediæval theories and laws, is training and preparing a class of inebriates who first commit petty, then capital crime, with a certainty which can almost be predicted.

5. The death penalty for such crime utterly fails for the same reason. The execution of any number of this class simply opens the door for an army already prepared and trained to take their places.

6. From a scientific study of these cases, it is clearly apparent that they are diseased and incapacitated to act sanely. Alcohol has palsied the brain and made them madmen. The very fact of continuous use of alcohol is evidence of mental impairment and unreasoning act and thought.

7. To hold such men accountable for their acts, and by punishment expect to deter them from further crime, and by such punishment check others from similar crime, is an error which both scientific teaching and experience point out.

8. The object of the State, through the law, is to protect society and the individual; but if the execution of the law-breaker fails to accomplish this end, the laws are wrong.

9. The unfounded fear that the plea of insanity in crime, and the failure to punish, is an encouragement for further crime, is flatly contradicted by statistics.

10. Among the mentally defective—the insane and inebriates, the death rate is followed by an increase rather than a diminution of crime.

11. The inebriate should never be hung for crime committed while under the influence of alcohol.

12. The method of punishment is never deterrent, but furnishes an attraction for other inebriates, who commit similar crime in the same way, following some law of mental contagion.

13. The inebriate murderer should be confined the rest of his life in a military work-house hospital. He should be under the care of others, as incapacitated to enjoy liberty and incompetent to direct his thoughts or acts.

14. A change of public sentiment and law is demanded, and a readjustment of theory and practice called for. The criminal inebriate occupies a very large space among the armies of the defective who threaten society to-day, and his care and treatment must be based on accurate knowledge, not theory.

15. Inebriate murderers should never be placed on public trial, where the details of the crime are made prominent, or the farcical questions of sanity are publicly tested. They should be made the subject of private inquiry, and placed quietly in a work-house hospital, buried away from all knowledge or observation of the world.

16. The contagion of the crime and punishment would be avoided, and his services might repair some of the losses to society and the world.

FOR the removal of tape-worm the *Northwestern Lancet* advises eight grains of salicylic acid every hour until five or six doses have been taken; then give a good big dose of castor oil. It is said to be very effective.

Hydrotherapeutics.

By S. BARUCH, M.D.,
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VII.

CONTRA-INDICATIONS TO COLD BATH TREATMENT OF TYPHOID FEVER.

OBJECTIONS CONSIDERED—STATISTICS REVIEWED.

PLEURISY offers an indication for cessation of the baths, because it demands rest. If, however, the temperature be persistently high, and nervous symptoms threatening, these must be combated by the bath, even though pleurisy be present.

Brand has never observed pleurisy in his 335 cases; Rolet in 1005 cases only four; Mollière only one in 234 cases. According to Betke the mortality from the complication, which is rare in the cases treated by the bath, is only 0.20 per cent. in 5,075; while in 1,420 cases treated medicinally it was 1.4 per. cent.

Severe cough and paroxysms of dyspnœa are not rare, when patients feel the first shock of the bath. But these symptoms soon subside. T. and B. mention five cases in which it persisted so as to require abstention from baths. In some cases the oppression of breathing is voluntary; the patient either imagines it, or he simulates it in order to alarm the attendant and prevent a continuation of the bath. By reassuring such patients, the fear may be overcome. If cyanosis and syncope occur, the bath must be discontinued, but in severe cases this should not deter us from renewing it. The graduated bath or the wet pack sometimes helps these cases. The cough is advantageous, as it relieves the bronchial tubes of mucus and stimulates the pulmonary circulation.

Hoarseness does not forbid the bath, but *œdema of the glottis* and *pericarditis* do.

Collapse is a contra-indication to the strict cold bath, but may be effectively met as has been referred to in a preceding article, by the warm half bath, with cold affusions.

Syncope and fainting have been charged as causes of death due to cold bathing. A large experience readily disposes of this bugbear. Death from sudden heart failure is not an unusual occurence in typhoid fever; the cold bath is, as I have shown, the best weapon against it. Koerber has shown that in 874 cases of typhoid treated by cold baths, only 10 died immediately after the bath, and these were very desperate cases. "What may be especially dwelt upon, is the fact," says Vogl, "that in thousands of baths not a single time was collapse to be observed; either before, during, or after the bath."

Albuminuria, infectious nephritis, œdema, are not only not a contra-indication to baths, but they are of the greatest value in these complications; they favor diuresis and relieve the kidneys. Only when extensive œdema or anasarca occurs should the baths be discontinued.

Vomiting and colic pains are not rare; they offer no bar to the bath, unless following invariably after it.

Perforation and peritonitis strictly forbid the bath, because the latter involves disturbance of rest.

The claim that these serious complications are sometimes due to the bathing has not only been refuted by abundant and convincing statistics with case histories, but the fact has been established that they have been reduced in frequency. Murchison's statistics of 1,271 cases give 196 cases of perforation (11.38 per cent.) Brand's 4,884 cases give 12 perforations (0.24 per cent.)

Intestinal hemorrhage when severe and accompanied by general symptoms, such as pallor, small pulse, cold extremities, subnormal temperature, forbid the continuance of the bath. A slight discoloration of the stools need not deter the attendant from continuing the baths. Brand has continued them in six cases with good effect. He distinguishes the congestive hemorrhage which occurs mostly before the fifteenth day, and which does not forbid the bath, from that occurring later and due to diseased action in the bloodvessels proper. If the hemorrhage is pronounced, rest is imperative and this alone requires abstention from the bath, which, however, may be again resumed, so soon as the hemorrhage is stayed, if the intensity of the fever demands it. Indeed this should be a rule in all cases in which the bath has been suspended for a cause, for to it may we entrust the invigoration of the patient which alone can tide him over the ever present dangers due to the fever processes. Free perspiration does not contra-indicate the bath. The patient should be dried with friction before being placed in it.

Bedsores forbid the bath (if large) because disturbance of the patient interferes with a strict antiseptic treatment. General ablutions and cold compresses should be substituted.

Erysipelas does not present a reason for discontinuing baths, so long as there is no extensive destruction of tissue accompanying it.

Late cases—viz., cases coming under treatment after the second or third week—do not forbid the bath. Although the effect of the latter will not be striking, and the prognosis cannot be expressed as favorable, hospital histories demonstrate that many desperate cases, which under medicinal or expectant treatment were formerly lost, now recover under judicious hydriatic treatment. The condition of the heart is the chief index to the bath or rather to the kind of bath. To react from a bath at 65°, a certain integrity of the central nervous system and of the heart muscle is required. This is almost surely impaired by a long continued febrile process, even if no actual organic degenerations have been developed. Hence the graduated bath of Ziemssen or the wet pack is more applicable, or a warm bath with cold affusions, followed by friction. These may restore the lost stamina and enable us to resort to the cold bath, if the symptoms demand it.

The analogy between the treatment of typhoid fever by strict cold bathing and the treatment of severe types of malarial fever by quinine is so striking that I desire to call attention to it, in order to illustrate the necessity of precise attention to detail. Any one who has, like myself, treated a large num-

ber of cases of the severe types of bilious remittent and congestive fevers on the Southern river banks, has realized how important it is to cinchonize the patient at the earliest possible moment, in order to prevent the recurrence of the paroxysm, which brings parenchymatous changes in its train. When the latter are once established, the fever continues despite the best directed administration of quinine. The antagonistic specific effect of quinine is no longer required; we have a hepatitis, a gastritis, or splenic enlargement to treat, with which we are unable to cope successfully. But if the malarial element be not wisely met by quinine, the patient will surely die from the combination of the malarial and parenchymatous diseases. So it is with typhoid fever. The cold bath represents the effect of quinine in malarial fevers: although it has not the specific antidotal effect, the cold bath, applied in the early stage, has the same prophylactic effect in preventing parenchymatous degenerations. If the latter have occurred, by reason of the neglect of the cold bath, we are called upon to meet them by stimulants, rest, etc.; but at the same time we may resort with advantage to some modification of the bath as a potent auxiliary.

One correspondent requests an opinion regarding the substitution of the cold pack for the bath. "What theoretical or practical reason," says she, "is there for considering (at least until tried in the individual case) that the cold pack, repeated every ten minutes for a time, will not act as an antipyretic and stimulant as successfully as the bath?" There are both theoretical and practical reasons to establish the inferiority of the pack. As an antipyretic, the cooling effect of the pack is limited to the first few minutes; the vessels are rapidly contracted by the shock to the peripheral nerves; the cooled blood is sent to the interior only until reaction is established. Now, however, the sheet surrounding the heated body rapidly absorbs its heat; there being no accession of cold, as in the bath, the now dilated superficial vessels do not receive cooled blood to carry to the interior, as in the cold bath. A second pack is required. The patient, now warm, his superficial vessels dilated far better than in the cold bath (with friction), is wrapped again in a sheet wrung out of water at 60°. The stimulating effect is pronounced; the patient is refreshed; the blood, cooled for a few minutes on the surface, rapidly diffuses its lowered temperature in the interior. But very soon equalization of temperature between the body and sheet take place, which, according to experiment, requires about ten minutes. A third and a fourth pack must be resorted to, each one reducing the temperature slightly by the process above indicated. Liebermeister has demonstrated by actual trial that four successive packs, of ten minutes each, reduce the temperature only as much as a cold bath of ten minutes. Hence it would require about five or six packs to produce the same effect of one of our 65° Brand baths. Aside from the trouble and time, and disturbance of the patient involved in six packs, even if we grant the antipyretic result, the stimulating effect cannot endure, unless the superficial vessels, relaxed as they are by the last pack, are again made to contract by a cold half-bath or ablution. It is a well established principle in hydriatic procedures, never to administer a wet pack without following it by a cold half-bath, because the object of all cold hydriatic procedures is reaction and consequent tonic effect.

The suggestion of my correspondent, however, is not without value, for the wet pack is a valuable auxiliary to treatment in those cases in which, by reason of great debility or marked antipathy to the cold bath or unpleasant effect of the latter, a substitute is required.

In children under ten years old, the bath at 65° should be administered with caution, gradually lowering the temperature of each bath, to ascertain the reactive capacity and resistance of the fever. In these patients the wet pack and graduated bath are valuable auxiliaries.

It will be observed that while the rule to bathe every case of typhoid or suspected typhoid regularly every three hours in water at 65°, whenever the body temperature reaches 103° in the mouth, is to be rigidly followed, there are conditions referable to the patient, or to the type and stage of the disease, which in hydriatic treatment demand as judicious modifications as in every other valuable therapeutic application. On the other hand, the more thoroughly we become familiar with the cold bath treatment, the more rare will be the apparent indications for modifying the temperature or quality of the bath. An accumulated experience will develop a remarkable universality of the rule.

The Polyclinic.

MONTEFIORE HOME, NEW YORK.

C. C. RICE, M.D., ATT. LARYNGOLOGIST.

Leo Ettinger, House Physician.

REMARKS ON APPLICATIONS TO LARYNX, ETC., IN CASE OF TUBERCULAR LARYNGITIS.

THIS man has a tubercular ulceration limited to the right vocal cord. In these cases the tubercular infiltration so thickens the cord that it admits of this ulceration. The arytenoids will soon be invaded by the disease. The house physician informs me that the man has pulmonary cavities. In making applications to the larynx, until we have become acquainted with the temperament of his throat we should only use mild applications; the use of strong ones will cause a spasmodic action of the larynx, which in the future may arise almost automatically, whereas if we train the throat we will have less and less trouble at each séance. The landmark in laryngeal application is the tip of the epiglottis; place your applicator on this, then sure of your position, go ahead. The use of cocaine renders topical treatment easy. The epiglottis is of no service as a guide in children; it is small, indistinct and not easy to feel. The arytenoids form a much better landmark; in intubation place your finger on this point, be sure that your tube is in front, and it can then be easily slipped into position. I have intubated in adults by the aid of the laryngoscopic mirror.—K. B. P.

The Times and Register

A Weekly Journal of Medicine and Surgery.

New York and Philadelphia, Oct. 26, 1889.

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THE CEREBRAL LOCALIZATIONS.

LIKE the historian of nations, who, in the midst of wearisome chronicles of ceaseless war and monotonous change of dynasties suddenly awakens to a high pitch of eloquence as he describes some wonderful work of man—whether it be the fabrication of a Bayeux tapestry or the discovery of a new continent—so will the future historian of medicine, in the midst of his long and tedious account of unsuccessful grappling with disease, suddenly cause his pages to glow with the fire of his own enthusiasm as he begins to describe the recent researches and discoveries made in regard to the cerebro-spinal nervous system. At last the very citadel of life, the residence of the divine intelligence itself, has been attacked, and it would seem that man need go no higher in his search after the mysterious unknown. The very sacredness surrounding the human intellect was the most potent cause of its own mystery in times past. Men thought and reasoned about its workings, but they never dreamed of looking in upon it during its activity in life. All sorts of notions were advanced and adopted as explanatory of the strange phenomena of mentalization, but not until within the last few years were they attributed to the united, harmonious action of several parts and areas of the encephalic mass, each of which has its own special function to perform. By the discoveries of the latter day neurologists we have, instead of the vain imaginings of the old metaphysicians about spirits and what not, the seat of the mental activities spread out before us like a beautiful mosaic, each minute part of which is absolutely necessary to the completion of the perfect mental picture.

But, after all, some will say, what is the practical value of all these charming discoveries? Can they be utilized in the alleviation of cerebral diseases, and when the attempt is made—as it has frequently been done—is not the rate of mortality almost equal to that of the diseases themselves? The knowledge alone is of inestimable value, were it entirely unavailable for practical purposes; but, fortunately, it is available, and though the results of cerebral surgery are not at first sight very gratifying, they are fast becoming more so. Men who croak over the beginnings of every advance in science are legion, and will always abound; but sooner or later they, with their croakings, are put to shame by the perseverance, earnest enthusiasm, and final success of those who, in the end, are the real benefactors of mankind. Who does not recall the early struggles of gynæcology, its miserable failures, its bungling operations, and its final contest with ignorant, unprogressive detractors? And yet, where is the surgeon to-day who is not craving to associate himself with the brilliant successes that are being achieved in this department of medicine? Those who long ago scowled at McDowell and Sims, are now like to bring their great work into ridicule in their wild rush to follow where these bold spirits led, for, as has been aptly said: one would almost think, by reading modern medical literature, that woman had no organs outside of the pelvis. Such will doubtless be the experience of brain surgery before it has gained its highest successes; but in the meantime let the magnificent work go on, and for the sake of humanity let it not stop until the very last atom of truth has been discovered and made available for the healing of the nations.

The most recent complete resumé of the subject is the paper entitled "Cerebral Localization in its Practical Relations," by Dr. Charles K. Mills, and read before the Congress of American Physicians and Surgeons at Washington, September 19, 1889. In the early part of the present century Gall, Bouillaud, and Broca located certain special functions, basing their views entirely upon clinical and pathological phenomena. Broca's speech center has remained undisputed to the present day. J. Hughlings-Jackson, in 1864, suggested that certain convolutions gave rise to certain movements which are under the immediate control of the mind. This suggestion was shortly followed by the researches of Fritsch and Hitzig, which settled to a certainty the truth of the localization theory, and gave immortality to their own names. Putnam and Braun, unknown to each other, were performing similar experiments, and arriving at similar results, in the year 1874. These investigators exposed the brain in the dog, and with the minimal current strength of electricity obtained certain definite movements. They then removed a slice of the cortex and, upon a reapplication of the current, obtained no response. Turning back the cortical flap and applying a slightly increased current to the surface, still intact, the same muscular contractions were reproduced. The separate researches of Weir Mitchell, Burdon-Sanderson, Bartholow, Wood, Ott, and others, as well as the clinical studies of Sir Crichton-Brown, Spitzka, Starr, Seguin, Park, and

Macewen, had all tended to strengthen the theory of special cerebral centers. But it remained for Ferrier, Horsley, and Schäfer, who gave special study to this question, and who experimented with lower animals upon a vast scale, to not only establish the correctness of the localization theory, but to quite definitely settle the positions of the various centers. With a few exceptions of minor importance, the views of these observers are generally held at the present day. As with all new discoveries, so here there are opposing views. Goltz follows the teachings of Flourens, and believes that the encephalon is a *single uniform* organ, and that its component parts can only act as a whole. Luys and Munk side with Ferrier in clearly defining the areas of the brain, and so considering the organ as strictly a *composite* one. Others agree with Exner and Luciani in maintaining that there is an overlapping of the centers, so that while their positions may be indicated in a general way, they cannot be sharply separated one from another. This last view is largely based upon the fact that in motor paralysis, due to a lesion of some cortical center, there is an equivalent loss of sensation in the same part. But, as has been aptly argued, the paralysis itself would prevent any expression of pain, even did the animal preserve its sensibility; and furthermore, sensation, whether muscular or cutaneous, is a treacherous symptom at all times to base any reliable observations upon, for people feel differently at different times and under different circumstances. As Dr. Mills declares: "the neurologist and surgeon must, therefore, depend on motor symptoms alone in fixing the site for operation in cases in which motor symptoms are definite. When positive sensory symptoms are present, they should regard these as indicative of the extension of the lesion towards either the limbic lobe or the posterior parietal convolutions; or, the involvement of the fibers going or coming from these gyres in the corona radiata."

Without attempting to go more fully into the subject of localization, for the space of an editorial is far too short to do it, or even the many investigators of it, anything like adequate justice, we will say, generally, that the consensus of opinion places the sensory centers at the posterior and basal lobes of the brain; the motor above the Sylvian and along the Rolandic fissures, and the psychic in the anterior lobes. If man went about on all-fours, as the lower animals do, these centers would correspond pretty nearly to the relative positions of the sensory and motor tracts of the cord.

An interesting question just in this connection is the center for the higher mental faculties and the possibility of localizing the lesion in various forms of insanity. No doubt now remains but that the cortex is itself the organ of the higher faculties; and since mentalization is itself but the combined action of motor and sensory conceptions in the abstract, its seat is in all probability commensurate with the entire cortex. The cortical gray substance, however, is made up of a number of layers, and a few observations seem to faintly indicate that certain of these layers are concerned in the special acts of mentalization.

Dr. Theodore W. Fisher (*American Journal of Insanity* for October, 1889) well says: "The ideational centers have no immediate connection with the action of individual muscles. The will can only control and the mind is only conscious of movement in the mass. Ideation deals with movements as well as sensations in the abstract. As there is a sensorium where sensations are combined and co-ordinated, there is a motorium, containing the organized residua of all past actions, ready to respond to adequate stimulus in any direction."

If the practical results of all this investigation upon cerebral localization were limited only to the cure of brain tumor—that most agonizing affection known to neurology—it would deserve the everlasting consideration of mankind. But relief has followed operations upon the brain, guided by localization, in cyst, fracture, abscess, hemorrhage and discharging cortical areas. Suffering has been mitigated and life saved. Even in circumscribed epilepsy the majority of operators consider the permanent paralysis following excision of a cortical area preferable to the continual epileptic attacks, Macewen notwithstanding. Even cases of insanity in which the lesion could be localized by the prominence of special symptoms have been benefited and cured by operation.

Hence we may be proud of these late achievements of science. The flood of light thrown upon many obscure, so-called functional diseases, that used to be among the opprobria of medicine, has afforded us knowledge worth exulting over, and which will doubtless restore many a wretched victim of pain and misery to perfect or comparative ease and comfort. Neurology, aided by surgery, is rapidly becoming one of the most exact scientific departments of medicine, and out of exact knowledge we are justified in hoping for more exact and favorable results.—L.H.M.

CURE OF HEMORRHOIDS BY EXCISION AND CLOSURE WITH THE BURIED ANIMAL SUTURE.

THE chief feature of the third day of the meeting of the *New York State Medical Association* was the paper by DR. H. O. MARCY, of Boston.

The writer emphasized the views of Mr. Whitehead in regard to the pathological changes usually found in these painful and troublesome affections. It is only by dissection of the parts in the living subject that the extraordinary dilatation of the hemorrhoidal plexus of the veins can be fully appreciated, and this is the essential factor to be eliminated in the process of cure. Dr. Marcy entered into a judicial and elaborate review of the different methods in more common use, condemning the ligature as unsurgical,

viewed from the standpoint of modern wound treatment, in that it necessarily produces necrosis of tissue, with its attendant conditions of fermentative decomposition, liable to cause septic poisoning. It is also tedious and painful, and deals in a blind and uncertain way with an undemonstrated pathological factor-age. Because of these objections, generally recognized, the clamp and cautery method is in common use. This Dr. Marcy thought should be relegated to history as a relic of barbarism, for the same general reasons that have caused its disuse in nearly every other wound made by the surgeon. The pain inflicted, the slowness of the healing process, and often the imperfect results, are abundant reasons for desiring a better method.

The injection of hemorrhoids by carbolic acid or other agents to produce their destruction, was a few years ago gladly accepted by the profession as a great improvement. The general consensus of surgical opinion, however, is condemnatory, chiefly because, no matter how carefully applied, the fluid escapes into the tissue where there is the least resistance, and the connective tissue surrounding and supporting the hemorrhoidal plexus is often destroyed—tissues very important to preserve—while the deformed veins, the real pathological factors, remain unchanged, leaving the patient in a worse condition than previous to the injection. Each of the above methods offered illustrations of what should be adopted as a surgical maxim, that blind surgery is bad surgery.

In attempting the radical treatment for the cure of hemorrhoids there is left almost no other method than that of dissection of the hemorrhoidal plexus of veins, recognized by all as the essential pathological factor. The fear of hemorrhage has evidently been the underlying reason why this method has not been more commonly adopted. This, however, Mr. Whitehead has clearly shown by abundant experience is not excessive and need not be considered under any of the ordinary conditions.

In order to control the hemorrhage, Mr. Whitehead is careful to dissect the veins little by little, and follow immediately by interrupted silk sutures co-aptating the skin to the divided mucous membrane.

Dr. Marcy's method is entirely different from that of Mr. Whitehead's, in that he first encircles with a row of continuous tendon sutures the base of the hemorrhoidal plexus before division. This method is briefly given as follows: The etherized patient is placed in a lithotomy position, the sphincter stretched to produce paralysis of the muscle, and the rectum and parts surrounding thoroughly cleansed with the sublimate solution. A pledget of wool, freely dusted with iodoform, is then carried into the rectum. Division is made by knife or scissors along the juncture of the skin and mucous membrane, and the plexus dissected quite down to its base on a line with the external fibers of the sphincter muscle. This is readily done without much loss of blood. The deformed hemorrhoidal plexus is thus separated from its surroundings, except at the base. A needle, with the eye near the point, threaded with tendon is carried behind the mass, emerging beneath the mucous membrane, unthreaded, rethreaded with the opposite end of the tendon, and then withdrawn. In this way the entire base is encircled by a line of deep double continuous sutures. The plexus of vessels is dissected with scissors from just above the line of sutures. The mucous membrane is now stitched by a continuous tendon suture to the line of division first made through the skin. Dr. Marcy prefers a running blind stitch taken from side to side, from within outwards, which also buries the external line of sutures. The operation is conducted with all possible precaution to prevent infection of the parts, irrigation being continued throughout. When coaptation is complete the united edges are carefully dried, dusted with iodoform and covered in with a layer of iodoform collodion. The bowel may be moved subject to the discretion of the operator any time after the third day. Primary union may be expected with resultant rapid cure.

Dr. Marcy's experience has been ample to test thoroughly the method as outlined, and he confidently recommends it to the profession.

COCILLANA.

So numerous have become the new therapeutic resources of the materia medica, that one may almost be justified in passing unnoticed some of them, particularly when they do not promise to accomplish any more than what long-tried remedies have already done. But in regard to cocillana, an exception will probably have to be taken, judging from Dr. David D. Stewart's clinical experience with this drug, as published in the *Medical News* of August 24, 1889.

Sycocarpus Rusbyi (cocillana) belongs to the natural order *anacardiaceæ*, and is a native of Bolivia, whence it was first obtained by Dr. H. H. Rusby, in May, 1886. The bark is the part of the tree employed, out of which a concentrated tincture and fluid extract are manufactured for medicinal use. It has a powerful and unmistakable physiological action which, in some respects, resembles that of ipecac. According to Dr. Rusby (*Thérapeutic Gazette*, August, 1888) it is used by the natives of Bolivia solely for its carthartic and emetic effects. Taken in the crude form it is also a vigorous expectorant. Some of the bark was partially dried in the sun, powdered in a mortar, and administered thus crudely in doses of twenty, thirty, and fifty grains, in three cases respectively; nausea, prostration, sneezing, nasal discharge, metallic taste in the mouth without dryness, diarrhœa, with rectal irritation, dull headache, slight perspiration, and free and profuse expectoration of mucus, were some of the more pronounced symptoms, chief among which were the expectoration, vomiting, and catharsis. Hence it is

suggested that therapeutically cocillana might be used in ordinary acute or chronic nasal catarrh, hay-fever, membranous croup, diphtheria, bronchitis, pneumonia, and allied diseases.

Dr. Stewart has tested the drug in forty cases, comprising ten of acute, one of subacute, and nineteen of chronic bronchitis; five of broncho-pneumonia, and five of phthisis. Nineteen of the patients failed to report. Of the twenty-one remaining, five were of acute, and eleven of chronic bronchitis; four of broncho-pneumonia, and one of phthisis. Some of these cases are related in full in the paper cited. Of the entire twenty-one cases, sixteen were benefited while taking the cocillana, and five of these were cured. Cough, expectoration, night-sweats, anorexia, and constipation were the special symptoms improved. The author's conclusions are, that this new drug is serviceable in bronchial catarrh, especially of the subacute and chronic form.

The dose of the concentrated tincture is from one-quarter to two fluidrachms. This preparation, of which Dr. Stewart used too small a dose to be completely effective, is not so eligible as the fluid extract. This latter preparation, of which we are now making extensive trial, may be administered in doses of ♏vij to ♏xxv every three or four hours. We hope to report our results later, and in the meantime we commend this new and apparently effective remedy to the consideration of our readers.—L.H.M.

Annotations.

CO-EDUCATION.

IN a letter to be found in another column, Mary Putnam Jacobi takes up the question of the Co-education of the Sexes in Medicine, and puts the subject in a new light. She looks on it from the standpoint of the woman who desires a medical education, and finds that the greatest advantages, the best teachers, are to be found in the schools appropriated exclusively to men. In fact, when we ask the question, Why does the student attend college at all, instead of studying his text-books at home? we reply that he goes there to hear the interpretation of these books, illustrated by the experience of those who teach. He chooses the college where the teachers are to be found whom he prefers; whom he believes best capable of imparting knowledge, or whose personal character gives most weight to their precepts. This freedom of choice as to preceptors the female student also asks; and we cannot denominate her demand as improper or unreasonable. But we think that Dr. Jacobi has limited too closely the field in which co-education would be inexpedient. As a teacher in medicine, we feel that the presence of women among our class of young men would be objectionable very frequently in the discussion of the etiology of disease—especially in the department of nervous diseases—and we believe that, as the course proceeded, it would be found that a large number of the subjects treated under the head of practice would be preferably delivered to the sexes in separate classes. Whether it is not the duty of an institution chartered by the State to provide facilities for the instruction of women, when they formally demand it, is a matter which might well bear investigation.

While with the exceptional man and woman, who think only of the noble profession to which they feel that they have been called, the freest co-education might present no difficulties, yet, in dealing with the great majority of those who fill the benches of our college classes, this would not be the case. It is only the few who feel the divine afflatus; the many are of the earth, earthy.

TREATMENT OF NEURASTHENIA.

THE treatment of neurasthenia is ably discussed by Prof. L. Hirt in the *Wien. Med. Presse*, Sept. 15. From two factors especially, he says, great things may be expected in neurasthenia: viz., electricity and water, preferably cold water. We may well say that the former offers no such beautiful results in any other nervous affection. Beard and Rockwell's general faradization is to be decidedly preferred, especially with the brush to be applied on every part except the head. The effect is striking; the patients, though unpleasantly affected by the application, feel themselves decidedly strengthened, and leave the physician as if newly born. The cold-water treatment of neurasthenia requires more care than in any other disease. He warns against excesses; the enfeebled, easily excited patients do not bear low temperatures well; they become sleepless, and the effect is negative. But with medium temperatures, 77° to 86° F., cautiously made by light rubbings with the wet sheet, brief affusions and cold, brief, sitz and half baths, avoiding douches altogether, the results are encouraging, if continued eight to ten weeks.

SUGAR FOR WOUND TREATMENT.

IN the Strasburg Clinic this well known "preservative agent" has been utilized as an iodoform sugar (one part of iodoform to ten of sugar), in the treatment of specific tubercular processes, and as pure sugar for ordinary wounds. The application is made by bags filled with sugar, which usually remain in situ six to eight days. It is also sprinkled upon wounds directly, in order to cleanse them of acid, deodorize them, and thus produce healthy granulation. Sugar does not possess antiseptic properties, but it is used as an absorbent of secretion and as a protection against infection from without, after purification by sublimate. Lactic acid is developed by its admixture with the fluids exuding from the wound, producing an acid reaction in which most bacteria fail to germinate.

Amputations, resections, complicated fractures, necrotomies, etc., were thus treated. The results would justify the conclusion that the sugar dressing is entitled to a position among other wound dressings, and that it may be preferred to others, because almost all wounds take a very favorable course under it, and it is, moreover, cheap and everywhere procured. —*Wiener Medical Presse*, No. 36.

Society Notes.

JEFFERSON COUNTY MEDICAL SOCIETY, ALABAMA.

Stated meeting August, 1889.

W. E. B. DAVIS, M.D., in the Chair.

DR. WILSON reported a case of

LEUCOCYTHEMIA

in a negro, aged twenty-one years. He had not had good health for four years. December, 1888, he began to have pains in the legs and got so much worse, that he was admitted to the County Hospital in January. At that time he had frequent hemorrhages from mucous membranes, was very anæmic, and gave a history of syphilis. He improved very rapidly under iodide of iron and was discharged. He improved after a few weeks treatment, but was readmitted in May with profound anæmia and some splenic enlargement. The heart murmurs were soft. He had been treated during this time with iron. He was now put on iodide of potassium without any perceptible benefit. A rough estimate of the blood corpuscles indicated both a relative and actual diminution of the red. An accurate estimate of the red and white blood corpuscles, the doctor thought, would furnish a positive diagnosis of leucocythemia.

In the discussion DR. J. D. GIBSON asked Dr. Wilson if there were present any petechial spots on the body, and if there was any hemorrhage of the internal viscera. He also raised a doubt as to the diagnosis of this case as there was no enlargement of the spleen. He discussed its relations in connection with hemorrhagic purpura.

DR. PARKE said, that Dr. Wilson's case was of decided interest to him, and while he concurred in the diagnosis of leucocythemia, he could not be certain in the diagnosis. To his mind it lay between leucocythemia, pernicious anæmia and the profound anæmia occasionally found in syphilis. He had examined the blood on two occasions, but not having the proper apparatus for counting the corpuscles, was not able to say definitely whether there was an apparent or real increase of the leucocytes. In watching this case, he had been impressed with an idea recently advanced by Mr. Jonathan Hutchinson, that in the evolution of disease, these marked cases are merely further advanced along the line of some simple disease. In this class there would be simple anæmia-chlorosis, pernicious anæmia and leucocythemia.

DR. JOHN D. S. DAVIS reported a case of

ILEO-COLOSTOMY IN WHICH DAVIS' CAT-GUT MATS WERE USED FOR APPROXIMATION.

July 16, 1889, 8 o'clock P.M., his brother, Dr. W. E. B. Davis, was called by Drs. Charles and C. F. Dremen to operate on a negro, aged forty-two years, and a furnace tender, for intestinal obstruction. He found the patient *in extremis*; temperature 101°, pulse 135. He made a diagnosis of peri-typhlitic abscess; suppurative peritonitis, and fæcal obstruction of the ileum, in the region of the ileo-cæcal valve, and expressed the opinion that the man would die in a few hours regardless of any operation.

He opened the abdomen from the symphysis to midway between the umbilicus and ensiform appendix, and found a peri-typhlitic abscess; general peritonitis, due to rupture of abscess sac; compound flexion of ileum—bound by strong adhesions in the region of the ileocæcal valve, and fæcal impaction, accompanied by great distension of intestines above the seat of obstruction. The abdominal cavity and abscess sac were thoroughly cleansed by irrigations of hot water. The ileum was opened near the point of obstruction and emptied of nearly one gallon of impacted fæces, liquids, etc. A second opening was made at the jejuno-ileum juncture, to allow the escape of a large quantity of gas in the upper part of the bowel. These openings were closed by Czerny-Lembert sutures. At this point in the operation the patient seemed to be holding out well; and, to avoid the necessity of resorting to the formation of an artificial anus, he was requested to do an anastomosis by means of his approximation cat-gut mats, with the view of establishing the continuity of the intestines. The ileum, above the seat of obstruction, was brought into communication with the ascending colon, below the point of obstruction, by making one incision, one inch and a half in length, in both intestines at a point opposite the mesenteric attachments, and the visceral wounds carefully united by means of his approximation cat-gut mats. A cat-gut mat, to which was fastened four braided silk threads, was introduced through each opening into the intestines. The lateral sutures were passed through the margins of the wound to prevent ectropium of the sides of the incisions. After the mats and sutures were in place, the wounds were brought in contact and the four sutures tied, which accurately coapted the serous surfaces of both bowels, over an area corresponding to the size of the mats. This procedure occupied only three minutes. No outside safety sutures were made, as the approximation was perfect and the coaptation sutures well protected between the approximation serous surfaces.

A glass drainage-tube was fixed in the lower portion of the wound and the peritoneum closed by a continuous cat-gut suture. Abdominal wall was closed by interrupted silk sutures, and an antiseptic dressing applied. Time occupied in whole operation, sixty-five minutes. The patient rallied nicely, was comfortable, and gave favorable signs of recovery for fourteen hours. Three hours after the operation was completed, the patient had a small fæcal passage, when a large quantity of gas passed per rectum. Temperature, ten hours after operation, 100°, and pulse, 120. Fourteen hours after operation, while unattended by the nurse, the patient attempted to get up by himself, and died suddenly, from exhaustion.

Necropsy two hours after death. Abdominal wound united. Omentum adherent to wound at points of operation and incisions. The anastomosis was perfect, and the new opening sufficiently large to nearly equal in size the lumen of the ileum. Adhesions between the two serous surfaces of the bowel firm, and extended a little beyond the line of approximation—as you can see from the specimen removed at the autopsy.

While this was a desperate case for any operative interference, he was sure that the patient's life was comfortably prolonged ten or twelve hours by the opening, emptying and washing out the abdominal cavity. He expressed his regrets that Dr. Dremon did not see the patient early enough to have been able to give him the benefit of the anastomosis at a time more favorable to recovery. Even at the late hour in his illness, at which the operation was performed, he did not think a better, safer, or easier means for restoring the intestinal continuity could have been had. The specimen which the doctor showed clearly illustrates the possibility of the future popularity of intestinal anastomosis. He is not at all doubtful of the great advantage it possesses, when obstruction exists, over the tedious, difficult, and often fatal operation of circular enterorrhaphy. The mechanical principle is clear, the method practicable, and the application clearly demonstrated. Resections with circular enterorrhaphy, lateral apposition with suturing and plastic operations have had their day (though of little value); the objection to them being a dangerous consumption of time, long exposure to infection, frequent leakage, and abscesses. While the application of the principle to man has yet been limited, the method offers advantages many times as great as the old operations in mortality, and can be applied in one-sixth of the time.

Intestinal anastomosis undoubtedly appeals to the practical surgeon, and will find greater favor every day; and it is no jejune proposition that its appeal to favor rests on the technique of the operative procedure, rather than upon the basis of inductive logic that has that mixture of a small amount of truth with a large amount of error which gives so many popular procedures their temporary plausibility and mischievous tendency.

He gave a description of how to make his catgut mats,[1] and demonstrated on the dog how easily they could be applied. He exhibited a dog, weighing twenty-five pounds, on which he had done three laparotomies—one for omental grafting and two for anastomosis. He also stated that the catgut mats, if not already on hand, could be made by the most ignorant nurse in one hour, of any desirable size.

Discussion.—Dr. W. E. B. Davis said that he agreed with the author of the paper that his catgut mats were superior to Senn's decalcified bone plates and Abbe's catgut rings. He thought the experimentations of the author had proven conclusively that the mats possessed all the qualities claimed for them. Referring to the case reported, he said this was the second case in which he had opened the abdomen three days after symptoms of rupture of a perityphlitic abscess with general suppurative peritonitis. While these were hopeless cases, the operation had given great relief in both instances, and certainly had not shortened the lives of the patients. He had operated in both cases in order to give the patient the benefit of a correct diagnosis, and with the hope that he might find a condition less serious than he had diagnosed. He said that the lesson taught in the reports of these late operations with fatal results was the importance of early diagnosis and prompt operative procedure. He thought if the abdomen could be opened within the first twenty-four hours, that the chances for recovery were favorable. He emphasized the importance of thorough study of perityphlitis by the general practitioner, that the surgeon might be consulted in time to give the patient the benefit of early operation. He favored opening the abdomen even after the third day, in cases of suppurative peritonitis, in order to wash out the cavity and to afford the patient relief; and, too, from the fact that a diagnosis could be made, and perhaps a condition found capable of relief. He cited in favor of exploratory incision a case which had been reported by Dr. Stross at the last meeting of the Society, which he had seen in consultation and advised against an operation, believing the condition to be cancer of the stomach in its last stages. A *post mortem*, however, showed the stomach to be healthy and full of woody fibre, and only needed an operation for its relief. He always operated in cases of perityphlitic abscess.

Dr. Abernethy asked Dr. Davis if he used drainage in such cases as reported.

Dr. J. D. S. Davis said, in his reply to Dr. Abernethy, as to drainage after intestinal anastomosis, that he was guided as in all other abdominal operations. He never put a drainage-tube in when he was able to thoroughly cleanse the abdominal cavity. When conditions existed with the abdominal viscera that necessitate drainage, he put in a blind glass drainage-tube with numerous lateral perforations. This is a device of his own, which he prefers to any other, as there is no distal opening into which the omentum may get and cause trouble; while still it has numerous small holes all around it to sufficiently allow the escape of any collected abdominal fluids. Through it the abdominal cavity may be flushed with sterilized water, and the water withdrawn by gravity without danger of getting air into the cavity.

In general suppurative peritonitis of three days, duration the serous surfaces of the bowel and peritoneal cavity are largely deprived of the endothelial covering, and the washing out of the abdominal cavity is followed by a copious exudation of plastic lymph, which like a cement substance, mechanically agglutinates the numerous coaptated folds of the bowel throughout. These multiple adhesions which bind the bowel in so many flexions can, possibly, be prevented by the early administration of cathartics which tend to relieve the paresis and increase the peristaltic move. And in cases where he thought it impossible after operation to restore the peristaltic move sufficiently to prevent adhesions, he would not hesitate to operate, that the sufferer might have the benefit of the doubt, and also for the purpose of rendering comfortable the dying hours of the patient.

Dr. A. T. Henly presented to the Society

TWO DOUBLE SILK LIGATURES

with the following history: Mrs. T. had suffered for two or three years with ovarian disease. Dr. T.

[1] *Virginia Medical Monthly*, May, 1889, pp. 166 and 167; *Alabama Medical and Surgical Journal*, May, 1889.

Gaillard Thomas performed a laparotomy on her on October 10, 1888, removing both ovaries and tubes. The recovery was uneventful, except that two fistulæ formed in the abdominal wound, and continued to discharge pus of a healthy character. She returned to Birmingham, December 1. During the spring months she suffered very considerable pain in both inguinal regions, with very marked tenderness. Probes could not be introduced more than one inch. In May this pain was very severe. There was no perceptible swelling. About the first of July a portion of a ligature made its appearance at the opening of the lower fistula, but it could not be removed without more force than was thought advisable to use. On 23d of July both ligatures were discharged upon the dressing, and the fistulæ both closed within a few days, leaving her without an ache or pain of any kind, and apparently in perfect health. One of the ligatures is in a perfect condition, the other has been partially absorbed. These ligatures came from the pedicles. In a private letter from Dr. Thomas, written in May, he stated that pedicle ligatures were causing the trouble and predicted that they would be discharged.

DR. J. D. S. DAVIS said that he believed the want of success with abdominal silk ligatures was due to insufficient sterilization. That silk thread contains more or less oil from the hands of the workmen, and they must therefore be thoroughly freed from all fatty matter before placing the same in the antiseptic sublimate solution, because, if the oil be present, watery solutions will not act on the thread to render it aseptic. He kept all ligatures in chloroform or ether for twelve hours before using them, then shakes well and immerses in 95 per cent. alcohol—leaves for twelve hours, and then transfers, while still moist to 1–1000 watery sublimate solution in which they may be allowed to remain for twenty-four hours. After taking from the bichloride solution, he allowed them to dry, and then rolled in sterilized linen compresses, and placed in a suitable glass bottle, or 95 per cent. alcohol, to keep.

He holds that the main object is to free the silk from all fat and oil before sterilization. And when ligatures for the abdominal cavity are thus rendered aseptic they are not liable to produce suppuration, or secondary abscess, though otherwise primary abscesses would necessarily be the result.

DR. W. E. B. DAVIS considered the silk ligatures a frequent cause of pelvic abscess. He also reported a case in which he had removed the ovaries and tubes, *nine* months ago, and stated that the patient had recently had an abscess due to the ligatures which opened into the vagina. He also referred to a case operated on three weeks ago, in which the ligatures had caused an abscess which opened through the rectum, after which the patient did well. While he recognized the silk as more liable to be followed by this complication, yet he considered it decidedly the safest ligature to use. He agreed with Dr. Goodell that cat-gut would soon bring one to grief in the loss of a patient from hemorrhages.

JAPAN has thirty-one schools of medicine, one of dentistry and two of veterinary surgery.

Letters to the Editor.

CO-EDUCATION IN MEDICINE.

WILL you permit me to make a remark in relation to the question of co-education in medicine, discussed in your columns on October 12th?

The difficulties in such education arising from considerations of delicacy only occur in connection with a limited range of subjects—namely, the anatomy, physiology and diseases of the sexual organs. It is perfectly feasible to give separate instruction on these subjects to classes who are united in the instruction of other branches of the curriculum, didactic or clinical, and who are submitted to the same test examinations.

It would also be desirable to have separate laboratories for dissecting and other practical work.

With such provisions, which are not at all difficult to carry out, it is not easy to see how any objection to medical co-education could arise on the score of delicacy.

It is not necessary to suspect illegitimate motives in the women who seek professional education in the schools hitherto devoted exclusively to men students. Women seek these schools because in them alone can they find the solid traditions, the complete intellectual horizons which have been developing during centuries of exclusive masculine prerogative. Denied the advantage of such schools in their own country, American women by scores expatriate themselves every year in order to enter European universities. Although no provision is made in these for separate instruction on any subject, it is perfectly practicable, as I know from personal experience, to spend several years in hospitals and medical classes, yet to completely avoid the few subjects that might justly embarrass a young woman in the midst of a class of men. Such avoidance would be still easier and cause much less sacrifice of valuable opportunities if European clinics were habitually conducted with the decency which American public opinion demands for the sake of the patients.

Women's colleges are needed to provide special drill, oversight, and in some directions instruction. But each should constitute an annex to a university, intended for the highest instruction of studious youth irrespective of sex. I confidently look forward to the time when this will be the case, and consider it a distinct misfortune that any other system has ever prevailed.

MARY PUTNAM JACOBI.

NEW YORK.

Cincinnati Letter.

AT the recent contest for the positions of externes, at the Cincinnati Hospital, becoming internes after a period of six months' service, there were fourteen candidates—eight from the Medical College of Ohio, and six from the Miami Medical College. Messrs. Landis, Mussey, Freiburg, Bettman, Brady, and Morris were the successful candidates from the Ohio College, and Mr. Morris from the Miami Medical College.

The *Daily Commercial Gazette*, of this city, found so much news in a recent Cincinnati letter in the TIMES AND REGISTER, that it published almost the whole correspondence.

The new amphitheatre at the Cincinnati Hospital, which is to seat 600 students, is completed and ready for use. It is quite an addition to the teaching facilities of the city.

Dr. H. Longstreet Taylor has succeeded Dr. A. B. Thrasher as editor of the *Cincinnati Medical Journal.* Dr. Thrasher, who has been editor of the journal since its foundation, four years ago, has found other duties very urgent, and was compelled to relinquish some part of his labors.

Dr. W. W. Dawson, last ex-President of the American Medical Association, has been made consulting surgeon to the Cincinnati Hospital.

Dr. J. C. McMechan has long been known as one of the most amiable of the profession in Cincinnati, and his many friends will not be surprised to learn that in his ever-readiness to be of service to his friends, he has severely injured the muscle of accommodation.

The Southwestern Ohio Medical Society held its First Semi-Annual Session at the Burnet House, Cincinnati, October 9 and 10, 1889, with the President, Dr. W. A. Campbell, of Eaton, in the chair. Dr. C. G. Comegys, of Cincinnati, made the address of welcome, and Dr. W. A. Campbell, of Eaton, made the Presidential address, in which he spoke of the hopes and desires of the society, and the good it might accomplish. Dr. J. C. Culbertson, of Cincinnati, delivered an address on the Importance of Medical Societies and Organizations, and the Necessity of Doctors Taking a Part in the Affairs of State. Dr. George Goodhue, of Dayton, read a paper on Rhinoplasty, which was discussed by Drs. Connor and Ricketts. Dr. Geo. W. Ryan, of Cincinnati, read on Congenital Luxation of Both Hip-Joints, discussed by Dr. C. Seth Evans, Cincinnati. Dr. A. B. Thrasher, Cincinnati, reported the removal of a cockle burr from the throat of a fifteen-year old girl, where it had remained for five days. The removal was effected by Mackenzie's laryngeal forceps. Dr. H. L. Taylor read on Hæmorrhoids and Fistula, which was discussed by Dr. W. W. Dawson. Dr. B. M. Ricketts, of Cincinnati, read on the subject, Ounce Doses of Iodide of Potassium in Syphilis. Dr. Goodhue reported the case of a young lady who took 1200 grains a day for several weeks, and was cured. Dr. C. H. Von Klein, of Dayton, read on the subject, Hypertrophy, Atrophy, and Deviation of the Nasal Septum, which was discussed by Dr. A. B. Thrasher, of Cincinnati. Dr. Chas. W. Dodd, of Cincinnati, read a paper on The Relation of Ocular to General Diseases. Dr. F. Forchheimer presented a new instrument—hæmatometer—for determining the hæmoglobin. He said this instrument was the only means of determining the difference between anemia and chlorosis. Dr. A. D. Murphy, of Pleasant Plain, read a paper on Digitalis in Acute Pneumonitis in Infants. The paper was discussed by Dr. Goodhue, who favored stimulating treatment in the last stages of pneumonia. Dr. A. W. Ashburn, of Batavia, read a paper on the Therapeutics of Antipyrin. He estimated the drug and its uses very highly, and condemned its indiscriminate use by the laity. Dr. E. W. Mitchell, of Cincinnati, agreed with the essayist in his high opinion of antipyrin, and thought it a very safe antipyretic. In anemic and neurotic women he found the drug had a bad effect. Dr. A. M. Brown, of Cincinnati, had used the drug in all diseases of nervous origin and in diabetes. He thought the drug did not receive the condemnation it deserved. It was whispered about among the doctors that the high mortality of the last typhoid fever epidemic in Cincinnati was due to the use of antipyrin. Dr. W. S. Christopher spoke in a scientific manner on the subject of Digestion. Dr. R. T. Trimble, of New Vienna, read a paper on Puerperal Eclampsia. Dr. A. C. Hawley, of Eaton, read a paper on Abortions, and the subject of the treatment of abortions was discussed by Dr. Gustave Zinke, of Cincinnati. Dr. C. A. L. Reed read a paper on A Case of Ovariotomy with Complications. Dr. R. B. Hall read on Abdominal Section Cases and Remarks. He endorsed early operations, as thereby malignant growth was often prevented and its recurrence was not so liable. Dr. Edwin Ricketts urged early interference. Dr. W. W. Hall, of Springfield, reported a case of Sarcoma of the Pelvis. The paper was discussed by Drs. Longstreet Taylor, Seth Evans, and Rufus B. Hall.

The subject of Diphtheria, which is just at present keeping the Cincinnati doctors from having nothing to do, was fully discussed. Dr. J. T. Whittaker, of Cincinnati, exhibited some diphtheria bacilli under the microscope. Dr. Whittaker discussed the etiology of the disease; Dr. Joseph Eichberg, of Cincinnati, discussed the pathology. Dr. Wm. Carson, of Cincinnati, discussed the identity of croup and diphtheria. Dr. Dan. Millikin, of Hamilton, discussed diphtheria of the genitals. Dr. Dandridge, of Cincinnati, spoke of tracheotomy. Dr. Wm. Johnson, of Cincinnati, discussed intubation. Dr. C. S. Caldwell, of Cincinnati, post diphtheritic paralysis. Dr. P. S. Connor, of Cincinnati, was not partial to tracheotomy in diphtheria.

Book Reviews.

ORTHODONTIA OR MALPOSITION OF THE HUMAN TEETH; ITS PREVENTION AND REMEDY. By S. H. GUILFORD, A.M., D.D.S., Ph.D., Professor of Operative and Prosthetic Dentistry in the Philadelphia Dental College; author of "Nitrous Oxide," etc. Cloth, illustrated, pp. 186. Spangler & Davis, Philadelphia.

No higher praise can be afforded this excellent monograph than the mere statement of the fact that it has been endorsed by the National Association of Dental Faculties, as a text-book for use in the schools of its representation. In these days of weak constitutions and luxurious living, the teeth are among the more important organs of the body to exhibit the general decline. There are so many causes in operation leading to their decay, irregularity and malposition, that it seems almost like a miracle that anyone should possess and preserve a perfect set of teeth

throughout life. Heredity, long retention of the deciduous teeth, their early and injudicious extraction, delayed eruption of the permanent teeth, accidents, habits, etc., are some of the causes of irregularities, the study and connection of which form particularly the subject matter of the present volume. The author has aimed to lead the student, step by step, from the simplest beginning to the more complicated and difficult work of practical treatment, and in so doing, has judiciously adopted the simplest and most direct manner. Part I is headed "Principles Involved," and contains eight chapters upon the causes of irregularity and matters relating thereto. In Part II the materials and various methods employed in correcting irregularities are explained and illustrated in three chapters. Part III is devoted to the specific forms of irregularity and their treatment, consuming in all some additional ten chapters. The illustrations are numerous, admirably drawn, and aid most materially in the understanding of the subject.

Pamphlets.

Extracts from Memoranda Relative to Water Supply and Disease in the City of Philadelphia. Made by DR. CHARLES M. CRESSON. Reprinted from the *Press*, 1889.

Medical Department of University of Wooster. Announcement for 1890. Williams Publishing Company, Cleveland, Ohio.

Evolution in the Causation of Disease. By J. N. BEST, M. D., Rosemont, N. J. Reprinted from the *Lehigh Valley Medical Magazine*, Vol. I, No. I.

The Medical Digest.

GUM-CHEWERS paralysis is the latest form of professional neurosis recorded in medical literature.

DR. LE FORT says that microbes are never conveyed in the air, but only by contact with the fingers, instruments, etc.

VALERIANIC ETHER has been used as a stimulant, more particularly for anæmic women subject to fainting fits. It is administered in pearls.

POMADE FOR CHAPPED HANDS.—Lanolin, 100 gm.; paraffin oil, 10 gm.; vanillin, 0.1 gm.; oil of rose, 1 drop. Apply morning and evening.

HYSTERIA IN MEN AND WOMEN.—Dr. Marie, assistant to Prof. Charcot, has been studying the comparative frequency of hysteria in the male and female. Basing his observation upon a large number of statistics, he finds that the disease is rarer in men than in women in the middle and upper classes of society, but in the lowest class the causes such as traumatisms, intoxications, alcoholic and other, are more patent in their influences upon the men. The author concludes with the statement that hysteria in the male is very frequent in the lowest class of society and seems even to be much more frequent than hysteria in the female.—*Revue Médicale.*

CHLORAL IN ECLAMPSIA.—Dr. Blanc, chief of the obstetrical clinic of the Faculty of Lyons, urges the use of chloral in eclampsia in the following manner: Introduce a medium sized œsophageal tube into the stomach through the mouth or nose, opening the former if there be violent contraction with some of the ordinary openers, or some sufficiently hard rounded body, or piece of wood shaped like a cork.—*Lyon Méd.*

TREATMENT OF DIPHTHERIA.—Rondot, of the Faculty of Bordeaux, praises the following treatment for diphtheria. On the one hand there should be local antiseptic treatment as complete as possible, and for this purpose, applications of the sublimate solution (1.500) and salicylic atomizings may be advantageously combined. On the other hand the general treatment should consist in the use of small doses of corrosive sublimate (four to six milligrammes); alcohol and milk; bromide of potassium for the laryngeal spasms; caffeine for the heart failure; and quinine for the elevated temperature. Local and general treatment should always be employed during the course of the diphtheria and even after the performance of tracheotomy.

—*Gazette Hebdomadaire des Sciences Médicales.*

CREASOTE, FORMULÆ FOR THE ADMINISTRATION OF.—Dr. Keferstein (Therap. Monatsch.) gives some very good formulas for the administration of creasote. The one at first recommended by Dr. Bouchardat, and later on by Dr. Frantzel, has been modified by the author as follows:

℞ Creasote . . . . . gr.xx.
Alcohol . . . . . ʒvj.
Cinnamon water . . . . . ʒiij.
Cinnamon syrup . . . . . ʒvj.
M. One teaspoonful three times daily.

For the pill-form the following is recommended:

℞ Creasote . . . . . gr.lx.
Powdered marshmallow root.
Purified licorice . . . . . āā ʒjss.
Mucilage of gum arabic . . . . q.s.
M. Div. in pil. No. cxx. Coat with gelatin.
Sig. One pill three times daily.

In irritative cough and diarrhœa the following is administered:

℞ Creasote . . . . . gr.xxx.
Acetate of lead.
Opium (pure) . . . . . āā gr.v.
Extract of licorice . . . . . ʒjss.
Mucilage of gum arabic . . . . q.s.
M. Div. pill. No. 50. Sig. One pill three times daily.

For children, creasote in the form of the following emulsion seems best adopted:

℞ Creasote . . . . . gr.xx.
Dissolve in almond oil . . . . ℥j.
Gum arabic . . . . . ʒv.
Water. . . . . ℥iij.
M. Make an emulsion and add
Comp. tinct. of orange peel . . . gtt. xv.
Oil of peppermint . . . . . ʒj.
M. One teaspoonful two to five times daily.

For drop doses the author uses the following:

℞ Creasote . . . . . gr. xlv.
Tincture of cinnamon . . . . . ℥j.
M. Fifty drops three times daily in a half a cup of warmed milk or warmed sweetened water, or Malaga wine, etc.

—*Deutsche Med. Wochens.*

ECZEMA.—Wiss (*L'Union Médicale*, No. 139) recommends the following ointment for eczema, especially for the hands: Resorcin, 1 part; vaselin, 20 parts.

PUS IN URINE.—To detect pus in urine, drop enough tincture of guaiac into a specimen to produce a milky appearance; then heat a few moments. The pus will produce a blue tint.

—*National Druggist.*

CREOSOTE EMULSION.—Dr. Charles Eloy gives the following formula in the *Gazette Hebdomadaire*, May 10, 1889:

Oil of sweet almonds	f℥v.
Beechwood creosote	f℥ii.
Mix, and add:	
Gum arabic	℥iii–℥v.
Mint water	f℥xvi.

M. Give from two to five soupspoonfuls a day.

IN certain varieties of rebellious night sweats Henri Huchard commends the use of ergot after ordinary remedies have failed. Give one gramme of the powder at night before retiring, or better still half an hour before the sweat begins. Repeat this dose one or two hours later. Continue the treatment for the succeeding three days. The sweat will be suppressed upon the first or second day. Subcutaneous injections of ergotine in doses of one gramme, or of ergotine in doses of one demi-milligramme may be used.

—*Journal des Praticiens.*

CHRYSAROBIN IN HÆMORRHOIDS.—Dr. Kossobudskii speaks of this drug in high terms, but he differs from Unna in the quantity. Dr. Kossobudskii uses a two and a-half per cent. instead of a five per cent, as Unna prescribes. After washing the swelling with a two per cent. lotion of carbolic, or a one per cent. of creolin, he recommends the following ointment to be applied twice or three times a day:

Chrysarobini	0.8;
Iodoformi	0.3;
Ext. belladonna	0.6;
Vaselin	15.0;—M.

or a suppository may be made with cocoa butter. If bleeding be present, tannin may be combined. Dr. Kossobudskii affirms that pain, smarting, and bleeding will disappear in three or four days.

—*Medical Press and Circular.*

DEATH FROM SUBLIMATE IRRIGATION AFTER ABORTION.—Seven years ago since Tarnier introduced the practice of washing out the vagina with weak corrosive sublimate injections. The results proved satisfactory, and the injections came into vogue in German and English, as well as French, lying-in-hospitals, extending freely into private practice. Like every thorough method of counteracting deadly agencies in the human organism, sublimate irrigation is not free from danger, and although it greatly reduces the death-rate and proportion of puerperal fever cases in long series of labors, some cases of mercurial poisoning will occur in those series, notwithstanding the most careful administration of the remedy. In this country Drs. Dakin and Boxall have published minute observations on mercurialism under the above noted conditions; they appeared in the *Transactions of the Obstetrical Society* for 1886 and 1888. Dr. Legrand read before the Anatomical Society of Paris, in April, a case of twin abortion, retained placenta, and death from acute mercurialism. Between the birth of the first and second child, 10 litres of a 1 in 2,000 solution of sublimate were employed to wash out the uterine cavity, twice at an interval of three hours only. Immediately after each injection of sublimate a 2 per cent. solution of boracic acid was thrown up into the uterine cavity; but sublimate had been several times employed for vaginal injection. After the extraction of the second child, the boracic solution was injected into the uterine cavity. The intra-uterine injections were discontinued, and boracic and carbolic solutions were used for the vagina. A day later gingivitis, salivation, colic, and dysentery set in, and carried off the patient in five days. The kidneys were large, pale, and very œdematous; they contained mercurial salts in solution. The palate was ulcerated; the œsophagus, stomach, and small intestine healthy. The mucous membrane of the entire large intestine was covered with eschars and ulcers, most marked on the summits of rugæ. The ulcers began in the cæcum, were least abundant in the transverse colon, and most marked towards the anus. The above conditions have been noted in many other cases of death after sublimate irrigations in childbed. The kidneys were diseased. Keller, of Berne, has already pointed out the danger of mercurial irrigation when these organs are not healthy. The English authorities just quoted both dwell on this danger. Dr. Legrand relates that the ulcerated intestinal mucosa swarmed with bacteria. This fact, he adds, must make us despair of ensuring intestinal antisepsis by means of corrosive sublimate.

—*British Medical Journal.*

UTERINE TUBERCULOSIS.—An interesting case of primary tubercular disease of the Fallopian tubes has occurred in Professor Lebedeff's wards. The patient, who was the widow of a man who had died of phthisis, was of a cachectic appearance and suffered from amenorrhœa. On examination, a firm, nodulated, intra-abdominal tumor was made out, situate in the space of Douglas. An attempt was made to remove the tumor, but had to be given up as disseminated miliary tubercle was found affecting the peritoneum. The intestines and the uterine appendages, too, were all matted together. Six weeks after the attempted operation, the patient died with symptoms of general tuberculosis. At the post-mortem examination miliary tuberculosis was found affecting the peritoneum, the lungs, the pleuræ, the colon, and the mucous membrane of the uterus. Both the Fallopian tubes were dilated and filled with pus, the epithelium in parts being absent. The intensity of the destructive process was greatest in the tubes, and became less marked towards the periphery. In sections tubercle bacilli were found; there was no tuberculosis, however, in the ovaries, and only the mucous membrane of the uterus was affected.—*Lancet.*

Medical News and Miscellany.

COWBOY dentists do not chloroform patients, they stun 'em.

DIPHTHERIA prevails throughout the State of Kentucky.

THE *Detroit Free Press* considers the land flowing with milk and honey a bad place for bilious colic.

IT was reported that small-pox was ravaging Pelee Island, Lake Erie; but there proved to be only one case.

PROF. BOKAI, in the *Lancet*, advocates picrotoxin as an antidote for morphia and a preventive of chloroform asphyxia.

A LADY physician declares that spanking has a harmful effect on children's spines. The want of a safe destination will spare the rod.

A TURIN physician has discovered that criminals, as a class, show a marked preponderance over other persons in respect of partial deafness.

PRESIDENT DE WINTON, of the geographical section of the British Association, states that American climate has improved the physique of the Anglo-Saxon race.

ERRATUM.—On page 569 the proceedings published were those of the New York State Medical *Association*, not Society. The Society is the "New Code" organization.

THE sanitary house-to-house inspection of a portion of the Nineteenth Ward developed 681 nuisances, 29 cases of typhoid fever, 8 of scarlet fever, and 5 of diphtheria, during the past year.

DR. NISSON relates, in the *Magdeburger Zeitung*, that he has extracted a needle, seven centimetres long, from the arm of a man in whose body it had travelled around for thirty years.

IT is proposed to found an Anglo-American Vienna Medical Association for giving information and moral support to English and American doctors and medical students of the Vienna University.

IN a boarding-house in Woodbury, N. J., eighteen persons were evidently sick, with symptoms of poisoning. The true cause could not be discovered, although it was supposed to be from eating oysters.

PROF. LEXIS, of Göttingen, has lately prepared statistics showing that there are in the German universities twice as many students as can hope to make a living by the professions which they are preparing to enter.

DR. ARTHUR BOTTCHER, Emeritus Professor of Pathology and Morbid Anatomy in the University of Dorpat, and at one time co-editor of the *St. Petersburger Medicinische Wochenschrift*, died on July 29, in the fifty-eighth year of his age.

DR. CHARLES L. WEED, of this city, whose death is announced in the thirty-second year of his age, was a well-known oculist. He was born in Columbus, Ohio, and graduated with high honors from Princeton College. He completed his professional studies at Jefferson Medical College in 1883, and went to Berlin, where he carried on some preparatory work. Returning to this city, he became resident physician at the German Hospital. Later he became chief of the Eye Department of the German Hospital, and of the Union Dispensary.

THE whole of the sewage of Paris will soon be used for the purpose of gardening. Gennevillier now absorbs and purifies a third of the Paris sewage water. Achires and Mery will soon utilize the rest.

—*Sanitary News.*

THE physicians in Biddeford, Me., objecting to amputate the foot of a man 80 years old, who was suffering with dry gangrene, the patient performed the operation himself. A doctor had to finish the work; but the man now walks about without the aid of a crutch.

UNDERTAKERS' permits must be obtained during office hours, except in cases of emergency, or when a death occurs after said hours, and the attending physician certifies that it is imperatively necessary to remove the remains from the city before ten o'clock the next morning.

The members of the Société de Médicine Pratique, of Paris, recently visited the Pasteur Institute, where they were received by M. Pasteur himself. The distinguished biologist delivered a short address, in which he spoke of the danger of placing dogs that had been bitten in quarantine for a short time, and then releasing them, instead of having them at once destroyed. This culpable negligence often led to disastrous results. M. Pasteur was particularly emphatic in affirming that rabies are never spontaneous.

THE Dental Department of the Iowa State University had 46 students in 1887, 75 in 1888, and for the present session 110 have been enrolled, while a number of others have been refused for want of room. The State will undoubtedly provide means for increased accommodations before the next term opens. The cause of this influx of students is not difficult to comprehend. The management has been quick to appreciate the value of modern methods in teaching, and not afraid to spend money to secure competent persons to impart instruction in them. Such a course is sure to win success.

THE Hartford Medical Society of Connecticut, which was chartered last winter by the legislature, and given power to hold one hundred thousand dollars' worth of property, has recently organized by electing the following officers: President, Gurdon W. Russell; Vice-President, H. P. Stearns; Secretary, C. E. Taft; Treasurer, C. D. Alton; Censors, S. B. St. John, W. M. Hudson, George R. Shepherd; Trustees, G. W. Russell, A. W. Barrows, M. Storrs. This Society, with true Connecticut thrift, proposes to have given to them a fine building, a fine medical museum and library at an early day. This is the true way to make medical societies popular, by having a permanent home to gather round.

To Contributors and Correspondents.

ALL articles to be published under the head of original matter must be contributed to this journal alone, to insure their acceptance; each article must be accompanied by a note stating the conditions under which the author desires its insertion, and whether he wishes any reprints of the same.

Letters and communications, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication, however. Letters asking for information will be answered privately or through the columns of the journal, according to their nature and the wish of the writers.

The secretaries of the various medical societies will confer a favor by sending us the dates of meetings, orders of exercises, and other matters of special interest connected therewith. Notifications, news, clippings, and marked newspaper items, relating to medical matters, personal, scientific, or public, will be thankfully received and published as space allows.

Address all communications to 1725 Arch Street.

Army, Navy & Marine Hospital Service.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, United States Army, from October 1, 1889, to October 19, 1889.

POINDEXTER, JEFFERSON D., Assistant-Surgeon. Granted leave of absence for one month. S. O. No. 113, Headqrs. Dept. of Dakota, September 30, 1889.

KENDALL, WILLIAM P., Assistant-Surgeon. Granted leave of absence for one month. S. O. 93, Dept. of the Platte, October 2, 1889.

BILLINGS, JOHN S., Surgeon. Detailed as delegate to represent the Medical Department of the Army at the annual meeting of the American Public Health Association, to be held at Brooklyn, N. Y., October 22, 1889. Par. 10, S. O. No. 230, A. G. O., October 3, 1889.

TREMAINE, WILLIAM S., Surgeon Relieved from temporary duty at Fort Leavenworth, Kansas, and will return to his home, Buffalo, N. Y. Par. 13, S. O. No. 230, A. G. O., October 3, 1889.

POPE, BENJAMIN F., Surgeon. Relieved from duty at Fort Clark, Texas, and will report for duty to commanding officer, Whipple Carracks, Arizona Territory. Par. 11, S. O. No. 230, A. G. O., October 3, 1889.

MUNDAY, BENJAMIN, Captain and Assistant-Surgeon. Granted four months' leave of absence. Par. 2, S. O. 233, A. G. O., October 7, 1889.

SMITH, A. K., Lieut.-Colonel and Surgeon. Leave of absence extended twenty-one days on surgeon's certificate of disability. Par. 7, S. O. 234, A. G. O., October 8, 1889.

GARTER, EDWARD C., Captain and Assistant-Surgeon. Granted leave of absence for twenty days. Par. 6, S. O. 234, A. G. O., October 8, 1889.

STEINMETZ, WM. R., Captain and Assistant-Surgeon. Ordered for examination for promotion. Par. 3, S. O. 236, A. G. O., October 10, 1889.

ADAIR, GEORGE W., Captain and Assistant-Surgeon. Leave of absence extended for fifteen days. Par 15, S. O. 238, A. G. O., October 12, 1889.

BRECHEMIN, LOUIS, Captain and Assistant-Surgeon. Granted leave of absence for one month. Par. 1, S. O. 98, Headqrs. Dept. of the Platte, October 12, 1889.

HAVARD, VALERY, Captain and Assistant-Surgeon. Leave of absence extended one month. Par. 3, S. O. No. 240, A. G. O., October 15, 1889.

BRADLEY, ALFRED E., First Lieutenant and Assistant-Surgeon. Relieved from duty at David's Island, New York Harbor, and ordered to Fort Omaha, Nebraska. Par. 2, S. O. 241, A. G. O., October 16, 1889.

EVERTS, EDWARD, Captain and Assistant-Surgeon Relieved from duty at Fort Apache, Arizona, and ordered to David's Island, New York Harbor. Par. 2, S. O. 241, A. G. O., October 16, 1889.

BRECHEMIN, LOUIS, Captain and Assistant-Surgeon. Relieved from duty at Fort Laramie, Wyoming Territory, and ordered to Fort Apache, Arizona Territory. Par 2, S. O. 241, A. G. O., October 16, 1889.

HARRIS, H. S. T., First Lieutenant and Assistant-Surgeon Relieved from duty at San Antonio, Texas, and ordered to Fort Keogh, Montana. Par. 2, S. O. 241, A. G. O., October 16, 1889.

O'REILLY, ROBERT M., Major and Surgeon. Granted leave of absence for six months, with permission to leave the United States. Par. 3. S. O. 241, A. G. O, October 16, 1889.

HEGER, ANTHONY, Lieut.-Colonel and Surgeon. Relieved from duty in Division of the Atlantic, and ordered for duty as Attending Surgeon, Washington, D. C. Par. 2, S. O. No. 241, A. G. O, October 16, 1889.

LORING, L. Y., Major and Surgeon. Sick-leave extended two months, on surgeon's certificate of disability. Par. 16, S. O. 241, A. G. O, October 16, 1889.

TAYLOR, MARCUS E., Assistant-Surgeon. Relieved from duty at Fort Stanton, New Mexico, and ordered to Boise Barracks, Idaho. Par. 10. S O. 242, A. G O, October 17, 1889.

HALL, JOHN D., Assistant-Surgeon. Relieved from duty at Fort Niagara, N. Y., and ordered to Madison Barracks, N. Y. Par. 10, S. O. 242, A G. O., October 17, 1889.

GIRARD, ALFRED C., Surgeon. Relieved from duty at Boise Barracks, Idaho, and ordered to Fort Niagara, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889

EWEN, CLARENCE, Surgeon. Relieved from duty at Madison Barracks. N. Y., and ordered to Willet's Point, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

GARDNER, EDWIN F., Assistant-Surgeon. Relieved from duty at Fort Lewis, Colo., and ordered to Fort Porter, N. Y. Par. 10, S. O. 242, A. G. O., October 17, 1889.

GIBSON, JOSEPH R., Surgeon. Relieved from duty at Fort Sheridan, Ills., and ordered to Governor's Island, New York Harbor. Par. 10, S. O. 242, A. G. O., October 17, 1889.

MAUS, LOUIS M., Assistant-Surgeon. Relieved from duty at Fort Porter, N. Y., and ordered to Fort Stanton, New Mexico. Par. 10, S. O. 242, A. G. O., October 17, 1889.

Changes in the Medical Corps of the United States Navy for the three weeks ending October 19, 1889.

HARMON, GEORGE E. H., Surgeon. Detached from the U. S. S. Constellation, and ordered to Naval Academy.

LOWNES, C. H. T., Assistant-Surgeon. Detached from the U. S. S. Constellation, and to Naval Academy.

WINSLOW, GEORGE F., Surgeon. Ordered to Marine Rendezvous, Boston.

HENRY, CHARLES P., Assistant-Surgeon. Ordered before the Retiring Board for examination.

BERTOLETTE, D. N., Surgeon. Detached from the Franklin, and ordered to Naval Hospital, Philadelphia.

RUSH, N. H., Passed Assistant-Surgeon. Detached from Naval Hospital, Philadelphia, and ordered to the Saratoga.

HIBBETT, C. T., Passed Assistant-Surgeon. Ordered to the Franklin.

Official List of Changes of Stations and Duties of Medical Officers of the U. S. Marine Hospital Service for the six weeks ended October 5, 1889.

FESSENDEN, C. S. D., Surgeon. Granted leave of absence for thirty days. October 3, 1889.

WYMAN, WALTER, Surgeon. Granted leave of absence for thirty days. September 3 and 21, 1889.

SAWTELLE, H. W., Surgeon. Granted leave of absence for seven days. September 26, 1889.

AUSTIN, H. W., Surgeon. Granted leave of absence for thirty days. September 9 1889.

GASSAWAY, J. M., Surgeon. When relieved at New Orleans, La., to rejoin station at Cairo, Ill. September 30, 1889.

GOLDSBOROUGH, C. B., Surgeon. Leave of absence extended thirty days, on surgeon's certificate of disability. September 16, 1889.

ARMSTRONG, S. T., Passed Assistant-Surgeon. Relieved from duty at New York; ordered to command of service at Cleveland, Ohio. September 17, 1889.

AMES, R. P. M., Passed Assistant-Surgeon. Assigned to duty at New Orleans, La., upon expiration of leave of absence. September 30, 1889.

WHITE, J. H., Passed Assistant-Surgeon. Leave of absence extended thirty days, on surgeon's certificate of disability. September 21, 1889.

NORMAN, FENTON, Assistant-Surgeon. Granted leave of absence for thirty days to take effect when relieved. October 4, 1889.

PETTUS, W. J., Assistant-Surgeon. Ordered to Portland, Me., for temporary duty. September 26, 1889. Granted leave of absence for twenty-six days, to take effect when relieved. October 3, 1889.

KENYOUN, J. J., Assistant-Surgeon. Granted leave of absence for thirty days. September 21, 1889.

VANSANT, JOHN, Surgeon. Granted leave of absence for fifteen days. October 16, 1889.

GOLDSBOROUGH, C. B., Surgeon. Leave of absence extended thirty days, on surgeon's certificate of disability. October 18, 1889.

PERRY, T. B., Assistant-Surgeon. Ordered to temporary duty at San Francisco, Cal. October 15, 1889.

VAUGHAN, G. T., Assistant-Surgeon. When relieved, to proceed to Evansville, Ind., for temporary duty. October 9, 1889.

Medical Index.

We purpose on this page to give a list each week of the more important and practical articles appearing in the contemporary foreign and domestic medical journals.

Abortion, Anonym. Medico-Legal Journal, September, 1889, N.Y.

A malignant tumor in an umbilical hernial sac, with remarks on the aetiology of cancer, Daniel Lewis, M.D., New York. N.Y. Medical Record, Oct. 12, 1889.

Contributions to the morphology of the saccharomycete of diabetic urine, J. Parker Smith, L.R.C.P. Lancet, Sept. 21, 1889.

Contribution à l'étude des lesions histologiques de la substance gise dans les encephalites chroniques de l'enfance, par Pilliet. Archives de Neurologie, Sept., 1889.

Contributions to the surgery of the abdomen, J. S. McArdle, F.R.C.S.I. (Concluded.) Dublin Journal of Medical Science, October 1, 1889.

Comparative value of antipyrin, antifebrin, and phenacetin, as antipyretics, Surgeon-Major A. Crombie, M.D. The Practitioner, Oct., 1889.

Difficult diagnosis, J. Mitchell Bruce, M.D. The Practitioner, Oct., 1889.

Discussion on the treatment of immature cataract. Brit. Med. Jour., Sept. 28, 1889.

Des antiseptiques locaux dans le traitement de la syphilis, per M. Hallopeau. La France Médicale, Oct. 3, 1889.

De l'intervention chirurgicale dans le traitement des tumeurs cérébrales, par le Dr. Thomas. Revue Médicale de la Suisse Romande, Sept. 20, 1889.

Deux cas d'osteomyelite infectieuse ayant comme portes d'entrée: l'une lymphangite d'original traumatique, l'autre une blennorrhagie ancienne (suite), par le Dr. Cauchoix. La Normandie Medicale, Oct. 1, 1889.

Du chloral et de ses dérivés au point de vue chimique, thérapeutique et pharmaceutique, par Yvon. Archives de Neurologie, Sept., 1889.

Des traumatismes du crâne dans leurs rapports avec l'alienation mentale, par Christian. Archives de Neurologie, Sept., 1889

Discussion on fibrinous membranes within the spinal canal, occurring in general paralysis, Joseph Wigglesworth, M.D., R. Percy Smith, M.D., and Prof. Auguste Vorsin, M.D., British Medical Journal, Sept. 21, 1889.

Electricity and the death penalty, Clark Bell, Esq., Medico-Legal Journal, Sept., 1889, N.Y.

Essay on the functions of indifferent cells in the human organism, James Dickinson. Lancet, Sept. 21, 1889.

Epilepsie somnambuliques avec accidents cataleptiformes, par le Dr. A. Paris. Archives de Neurologie, Sept., 1889.

Etude physiologique et thérapeutique du massage de l'abdomen. Son action sur la diurese, par le Dr. Rubens Hirschberg. Bulletin Général de Thérapeutique, Sept. 30, 1889.

Etudes sur les centres psychomoteurs chez l'enfant et les animaux nouveau-nés, par P. Langlois et R. Romme. La Tribune Médicale, Sept. 26, 1889.

Ice spoils fish, J. Lawrence-Hamilton, M.R.C.S. (No. III.) Lancet, Sept. 21, 1889.

Infantile ophthalmia (blennorrhœa neonatorum) and its prevention, Karl Grossman, M.D. Brit. Medical Journal, Sept. 28, 1889.

Influence of massage on the rate of absorption from the intestine, A. Symons Eccles, M.B. The Practitioner, Oct., 1889

Introduction to discussion on the treatment of glaucoma, Jonathan Hutchinson, F.R.C.S. L.E.D., etc. Brit. Medical Journal, Sept. 28, 1889.

Les maladies et les passions, par le Dr. Sorel. La Normandie Médicale, Oct. 1, 1889.

Monomania, Clark Bell, Esq., Pres., Medico-Legal Journal Sept., 1889, N.Y.

Medical Expertism, S. Gold First, Esq. Medico-Legal Jour. Sept., 1889.

Myxœdema ou cachexie pachydermique (Charcot), par Kovalevsky. Archives de Neurologie, Sept, 1889.

Mineral waters of Brides-les-Bains, C. E. Fitz-Gerald, M.D. Brit. Med. Journal, Oct. 5, 1889.

Notes of a case of sclerotitis, apparently of dental origin, John Hern, M.D. Brit. Med, Journal, Sept. 28, 1889.

Note on treatment of tinea tonsurans, H. S. Prudon, M.D. Dublin Journal of Medical Science, Oct. 1, 1889.

Pyo-salpinx, with remarks on the old faith and the new regarding parametritis and perimetritis, John W. Taylor, F.R.C.S. Lancet, Sept. 21, 1889.

Pyosalpinx, points in the diagnosis of, Hatt. The American Lancet, Oct, 1889.

Posterior dislocation of both bones of the forearm, on the mechanism of, accompanied by fracture of the external condyle, with remarks as to the treatment of old posterior elbow dislocations, Fischer. Amer. Practitioner, Oct., 1889.

Primary lithotomy in Russia, Idelsen. Annals of Surgery. Sept., 1889.

Perityphlitis in children, Huber. Archives of Pediatrics. Oct, 1889.

Pigment in the negro, notes on the formation of, Morrison. Med. News, Oct 12, 1889.

Periostitis of the ribs after typhoid fever, Potter. Pacific Medical Journal, Oct., 1889.

Prolapsus ani and its treatment, James. Hospital Gazette, Sept. 28, 1899.

Physical training of the insane. American Journal of Insanity, Oct., 1889.

Physical training of the insane, remarks on, Adams. *Ibid.*

Physical exercise, Benson. Southern Clinic, Oct., 1889.

Peritoneal effusions after intra-peritoneal operations, a few considerations on, Myers. Cin. Lancet Clinic. Oct. 5, 1889.

Pseudo muscular hypertrophy, Lyman. American Practitioner, Oct., 1889.

Phthisis pulmonalis, a case of, with uncontrollable nasal hæmorrhages, Robison. *Ibid.*

Phantom pregnancy, Stone. Omaha Clinic, Sept., 1889.

Pathology and treatment of disease of the naso-pharynx, some points in the, Mackenzie. N.Y Med. Jour., Oct. 5, 1889

Paraplegia, from a gun-shot wound of the skull, over the cortical leg centers, Petersen. *Ibid.*

Remarks on the prevention of hydrophobia by M. Pasteur's method M. Armand Ruffer, M.A. M.D. Oxon. (With diagrams.) British Med. Journal, Sept. 21, 1889.

Review of methods for exact registration and some coarse changes in the brains of the insane, F. St. John Bullen, M.R.C.S. Illustrated. British Med. Journal, Sept. 21, 1889.

Remarks on the Maybrick trial, William Carter, M.D. Ll.B B.Sc. F.R.C.P. Lancet, Sept. 21, 1889.

Recherches cliniques et experimentales sur les accidents survenant par l'emploi des scaphandres, par Catsaras. Archives de Neurologie, Septembre, 1889.

Relation of diet to uric acid formation, William H. Draper, M.D., New York. N. Y. Medical Record, Oct. 12, 1889.

Recherches sur la nature et les causes de la rigidité cadavarique (suite), par Catharine Schlipiloff. Revue Médicale de la Suisse Romande, Sept. 20, 1889.

Recherches physiologiques sur l'acide cyanhydrique, par M. N. Gréhaut. La France Médicale, Oct. 5, 1889.

Recherches cliniques et experimentales sur l'antisepsie médicale, par M. le Prof. Petresco. Bulletin Général de Thérapeutique, Sept. 30, 1889.

Sur la deformation des balles de revolver soit dans l'arme, soit sur le squelette, Dujardin-Beaumetz. Bulletin Général de Thérapeutique, Sept. 30, 1889.

Treatment of scrofulous glands, Frederick Treves, F.R.C.S. Lancet, Sept. 21, 1889.

Traitement de l'endométrite par la flèche de chlorure de zinc. La Normandie Médicale, Oct. 1, 1889.

Traitement du goitre par les injections interstitielles de teinture d'iode, par le Dr. Terrillon. Bulletin Général de Thérapeutique, Sept. 30, 1889.

Zur Prophylaxe der Lungentuberkulose, Fürst. Deutsche Medizinal-Zeitung, 23 Sept., 1889.

Notes and Items.

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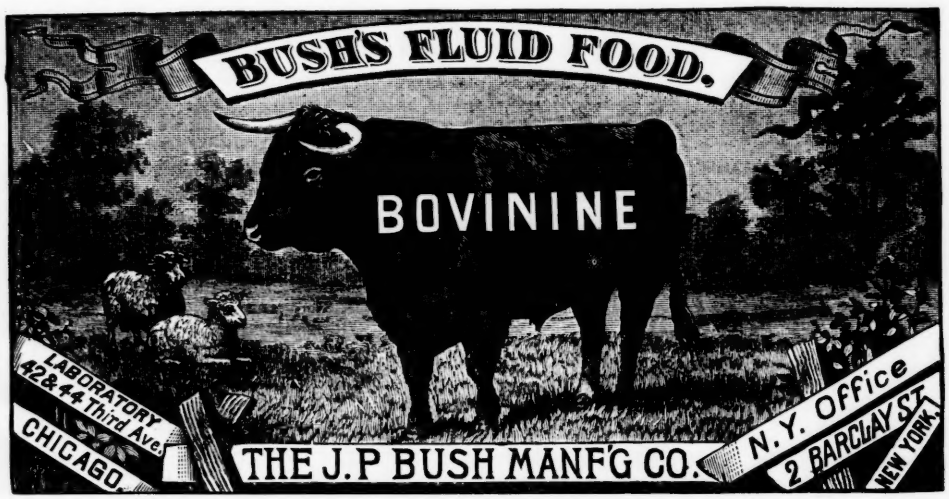

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BY B. N. TOWLE, M.D, OF BOSTON.

"Nervous debility and neuralgia are often the results of nerve starvation. They are now, more than ever, the dread of every intelligent physician, and the terror of all business men. The weary hours of pain, and the sleepless nights of those suffering from nervous diseases, are but the beseechings of an exhausted nerve for food. Hungry and starved, they make their wants known by the pain they set up as their only agonizing cry; and no medication will give permanent relief until the hunger is satisfied.

Our research, then, must be to find a more easily digested and assimilated food.

Observation seems to sanction the fact that vegetable food elements are more readily assimilated by persons of feeble digestion than are the animal food elements, and especially when they have undergone the digestive process in the stomachs of healthy cattle. The juices of these animals, when healthy and fat, *must* contain all the food elements in a state of solution most perfect, and freed from all insoluble portions, and hence in a form more easily assimilated than any other known food.

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I have given it to patients continuously for months, with signal benefit, especially in complicated cases of dyspepsia, attended with epigastric uneasiness arising from enervation, and in nervous debility of long standing. The sudden and full relief this food affords patients who have a constant faintness at the stomach, even immediately after taking food, shows how readily it is assimilated. This faintness is a form of hunger, and is the cry of the tissues for food, not quantity but quality—a food that the famishing tissues can appropriate and thrive upon.

Raw Food is equally adapted to lingering acute diseases. I have used it in the troublesome sequelæ of scarlatina, where there was exhaustion from abscesses in the vicinity of the carotid and submaxillary glands; and in protracted convalescence from typhoid fever, with marked advantage. The cases that I especially value it in are laryngeal consumption and nervous exhaustion, in which cases there is always more or less derangement of the digestive tract, such as pain in the stomach, constipation, eructation of gases, distress after taking food, etc. Raw Food should be taken with each meal, the patients taking such other food as they can readily digest, in quantities suited to the individual case.

It adds much to the nutrition of the patient, overcomes the constipation, subdues the nervousness by increasing the strength, and is just the amount added which is required to secure success."

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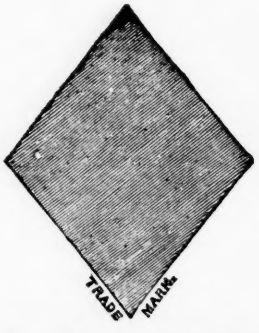
DEMAND THE 

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